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LECTURES
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LECTURE I.

GENERAL DIVISION OF THE ANIMAL FRAME.

GENTLEMEN,—Of the *systems* into which the subject of our lectures may conveniently be divided, the most important are,—the *Sensorial* and the *Circulatory*. The *sensorial* is the *primum mobile* of the animal machine.

The Brain and Nerves.—The brain is the organ to which all sensation is referred. From this, or from its prolongation in the spinal canal, animals derive the power of voluntary motion: it is the fountain of animal life,—the medium by which we are rendered conscious of surrounding objects, and made susceptible of pleasure and of pain; and on which, in every kind of animal,—and the gradation extending far lower in the scale of life than many are willing to allow,—intellectual power and moral feeling entirely depend.

Next in importance, but discharging a different function, is the *sympathetic* or *ganglionic* nerve, whether first brought into view at the base of the atlas, or extending in innumerable radiations, through the whole of the thoracic and abdominal cavities, being one of the fountains of *organic* life:—ramifying over every viscus, and surrounding every vessel. By its influence the heart beats, the lungs heave, and the stomach digests. It is unconnected with sensation but by anastomosis with the cerebral nerves, and is totally independent of the will.

To this will succeed that kindred and newly-discovered power, *the respiratory nerves*; newly discovered, at least, with regard to their function, and the discovery of which will immortalise the name of Bell, and on no scientific man was ever an honorary distinction more worthily conferred by his sovereign. They are derived from the lateral column of the medulla oblongata and the spinal chord, and are connected with those of the ganglionic system from their very origin, anastomosing freely with them, associated with them in function, and, at length, perfectly mingled and identified with them. The respiratory nerves (prior to their perfect amalgamation with the ganglionic) constitute another fountain of *organic* life; somewhat differing in function, however,—acting when the animal is unconscious of the action, and in despite of the will; yet, to a certain degree, under the influence and control of the will, and sensitive only as connected with the ramifications of the sensitive nerves of the spinal column. They are interposed between the nerves of voluntary motion and those of sensation, a kind of neutral ground between them, deriving assistance from, or lending it to, the cerebral nerves; they proceed first, as their names imply, to the respiratory organs, but do not terminate there, for they are, either directly or indirectly, conveyed to, and influence, every viscus.

Having, in a former course, considered these functions of the nerves, I entered on the consideration of their diseases, whether referable to excessive, or diminished, or irregular, or suspended influence—causing tetanus, rabies, epilepsy, palsy, chorea, and various other affections.

The Circulation.—A stimulus presupposes a tissue to be acted upon, and in that tissue a power of responding to the stimulus,—a principle of contractility, and as that which is exclusively necessary to the existence or continuance of this contractility, is a constant and due supply of arterial blood, I was led to the *circulatory system*, the mechanism of the circulation, the power by which the blood is propelled, and the vessels through which it flows. I considered the construction of the central machine—its percussive action—that by which, in many of the operations of nature and of art, power is so astonishly multiplied. I followed the blood through the arteries.

These vessels, in the natural and healthy

state of the circulation, seem to be mere mechanical tubes; yet, in the event of disease or derangement, they prove to be something more, and are capable of exerting a controlling influence over the frame, supplying power in the central machine when there is a defect of it, or neutralising its too-energetic action. Ramifying from every portion of the arteries, or the arteries terminating in them, are the *capillary vessels*. These vessels are so minute that there can be in them no *vis a tergo*; for the attraction which the parietes of these tubes, so nearly in contact, exert on the blood passing through them, is fully sufficient to neutralise any force impressed from behind. Then, that coat which is little developed and powerless in the larger vessels, but which comparatively increases in bulk and in power as the vessel diminishes in calibre—the muscular coat—takes up the action, and, supplied with energy by the ganglionic system of nerves, contracts upon the contents of the capillaries, and continues to force the vital current onwards in its course.

The capillary vessels having traversed every portion of the frame, every secretion having been duly performed, each tissue having been supplied with the power of contractility, and each worn-out part of the frame being again built up, the blood begins to be collected together in other vessels of a different construction, which exert little or no power on the fluid that traverses them; but the blood, unaided by any propulsive power from the heart, pursues a returning course to the centre by means of the principle of *derivation* which now supplies that of *percussion*.

When the piston is raised in the barrel of a pump, the water flows in at the lower end of the pipe and prevents the formation of a vacuum; this is the effect of atmospheric pressure on the water. So when the heart, having contracted on its contents, resumes, by an inherent principle of elasticity, its natural form and state, that of dilation, the blood flows in from the cavæ as the water flows into the pump, and by the same principle. As in the artificial pump the fluid would rush through the pipe, although it were a hundred yards in length, when the piston is raised, so, when the ventricle is suddenly dilated, the blood flows on from the remotest portion of the venous canal.

The motion of the blood forwards, is much assisted in the extremities of the body by the action of the muscles, and thus exercise is the readiest way of quickening the circulation. The assistance in this way rendered by the muscles,—which compress the veins,—is regulated by the valves of the veins, which will permit the blood to flow on, but not to take a retrograde course.

All this will again pass in review before us, but, at present, I wish to proceed to the changes which take place in the blood during its circulation through these differently-constructed vessels; and shall commence, by inquiring into the change which is effected during the shorter or *pulmonary* circulation. In other words, the *respiratory* system will first occupy our attention during the present course.

Respiration is the act of breathing—the alternate reception and expulsion of air, into and from the chest. This part of our subject, then, admits of two natural divisions—The mechanism by which the air is inhaled and forced out, and, The effect which the air produces during its continuance in the chest.

The thorax, or chest, contains, besides the heart and thymus gland, two large spongy bodies, the lungs, by which the cavity of the chest is completely occupied and filled. When we trace the minute structure of these spongy bodies, we find that they partly consist of numerous blood-vessels designed to convey nourishment to them, and of a far greater number of other vessels bringing blood from the heart to the lungs, and afterwards returning it to the heart again; and also of thousands of other little tubes, carrying no blood, but only air, —which latter may be traced, in one direction, to blind pouches or bags, and in the other, through the trachea, and pharynx, and mouth or nose, to a free communication with the external atmospheric air. The whole are surrounded by, and embedded in, a great quantity of elastic cellular substance called the *parenchyma*, which is capable of expansion or compression, and yields to the slightest impulse or power.

The thorax is bounded within, anteriorly, by the vessels which enter it or proceed from it, and the cellular substance by which those vessels are surrounded; posteriorly, by the diaphragm; laterally, by the ribs; superiorly, by the spine; and inferiorly, by the sternum; and, by means of certain muscles and cartilages, it is capable of enlarging or contracting its dimensions to a very considerable degree.

The diaphragm is a strong muscular curtain, partly fleshy and partly tendinous, stretched in a slanting direction from the spine to the sternum, and dividing the chest from the abdomen. In its natural state, it is convex towards the chest, and concave towards the abdomen; and it is supplied with nerves from the lateral or respiratory column.

Stimulated by the phrenic nerve, it contracts. The action of all muscles is that of contraction. As it contracts it must lose its convexity and become straighter. And what is the consequence of this contraction? That the cavity of the chest is proportion-

ally enlarged. Then, as in the raising of the piston in the barrel of the pump, so the dilation of the chest, forms a vacuum there, and the lungs expand and the air rushes down the windpipe, and fills the cells of the lungs, and they completely occupy the chest, and the equilibrium of pressure is restored.

The intercostals act in an indirect manner, very little assisting respiration in natural breathing. On the contrary, they would seem to be antagonists to the diaphragm, yet they do enlarge the cavity of the chest. The first rib is a fixed point; the intercostal between it and the second rib, by contracting, brings the second nearer to the first, and the third follows the second, and the whole are carried somewhat forward and outward, and thus the cavity of the thorax is increased.

The air-cells being thus filled, the phrenic nerve ceases to bestow its influence; and the diaphragm, by the inherent elasticity of its fibre, resumes its former shape, —it protrudes again towards the chest,—the intercostals cease to act,—by the elasticity of the cartilages the ribs fall,—the cavity of the chest is diminished,—the lungs are pressed on every side, and a portion of the air is forced out. The abdominal muscles occasionally assist powerfully in this, and always to *some* degree; but in the usual healthy breathing their aid is not required or lent to any considerable extent. Presently, but from what cause we know not, the influence of the phrenic nerve is felt again, and the diaphragm once more contracts, the ribs are thrown outward, the cavity of the chest is enlarged, there is less resistance to the external air, and it again rushes in; and thus, during life, the chest continues to expand and to contract, and the atmospheric air to rush in and to be expelled.

It is judiciously remarked by Dr. Bostock, that inspiration is the vital act, and that expiration is the mechanical return to quietude by the elastic re-contraction of the parts displaced, whether we consider the cartilages, the diaphragm, or the lungs themselves.

What is effected by the filling and emptying of these living bellows, the lungs? I will not detain you by enlarging on any of the secondary effects of respiration,—such as the dependence of the voice on the passage of air,—*the acceleration or retardation of the circulation, by the occasional pressure on the thoracic and abdominal viscera,—the assistance of digestion, and of the expulsion of the fæces,*—the maintenance of the proper degree of temperature in the frame, —and the sense of smell. But there is one fact of peculiar moment. The blood that flows from the left ventricle of the heart through the aorta into the whole frame, is red, vital, able to support the secretions, and to nourish and build up the body; but, having parted with some of its substance and properties in performing its duties, or by the absorbing power of the vessels,—or from the direct influx of fluid through the lymphatics, having mixed with other ingredients, and acquired a different character,—it becomes black, and, if not poisonous, yet inefficient to carry on life; it is no longer able to bestow on the tissues the power of contractility. If supplied with this blood unpurified, every muscle of organic and animal life would instantly cease to act; and the heart, the very source of circulation, would at once stop, and the animal immediately die. The grand effect produced by respiration, then, is, to change the venous blood to arterial—the inefficient to efficient.

How is all this effected? What mysterious change is it that takes place in the circulatory fluid? The venous or impure blood is sent from the right ventricle of the heart to the lungs through the pulmonary artery, which branches into divisions more and more minute, until they are many times less than a hair; and these minute vessels ramify over the cells in the lungs in which the air-passages terminate. When these cells are distended with air, the air and the blood are separated from each other only by such gossamer-like membranes, that the one can act upon the other: by this process the blood is purified.

It will be my pleasing task, in other lectures, to describe, and to illustrate by experiment, the chemical effect which thus takes place. The blood has received a quantity of carbon, and has acquired other matters which need to be modified and changed. One of the ingredients in atmospheric air is oxygen, which has a strong affinity for the carbon, and also for these other matters, and a double decomposition, or change of principles, takes place in the little cells in which the blood and air have been brought into contact. The carbon quits the blood and combines with some of the oxygen of the air, and forms carbonic acid; and more of the oxygen quits the air and unites with the other injurious and unknown substances in the blood. By this loss of carbon and gain of oxygen the blood is changed from venous to arterial—from poisonous to vital—the contractility of the tissues to which it is sent can continue, and all the functions of life are discharged.

You see, then, with what important physiological matter the respiratory system is full; and that, with reference to disease, it contains next to, or more than, the foot, that which most interests us in pathology. Nasal gleet, glanders, roaring, bronchitis,

catarrhal fever, pneumonia, pleurisy, broken wind, thick wind, and various other chest affections, will pass in review before us; and, indirectly, it involves many a subject most intimately connected with the health and usefulness of all domesticated animals.

THE NASAL CAVITY OF THE HORSE.

Its Structure.—The respiratory passages open on the external air at the *nostrils* of the *horse*, and at the *mouth* and *nostrils* of our other patients. The mechanism of the velum palati, or soft palate, prevents the horse from breathing through his mouth. The nasal cavity will therefore first come under consideration.

Its bony parietes are composed of the nasal, the superior and anterior maxillary bones, the æthmoid, the palatine bones, and the vomer; and it contains the convoluted portion of the æthmoid bones, the superior and inferior turbinated bones, the lachrymal duct, and the canalis infra orbitarius.

I will endeavour to give a brief description of each. First, observe the *nasal bones* in the horse, occupying the greater part of the face. We find them connected, externally, with the frontals, posteriorly; the lachrymals, laterally and posteriorly; the superior maxillaries, laterally, and along the middle part of the face; and laterally and anteriorly with the termination of the process of the anterior maxillary, received between them and the superior maxillary. Along the median line of the face is the nasal suture which unites them to each other. Within, they are connected with the cartilaginous septum and the posterior turbinated bone.

Observe the form of the nasals—broad, and rounded above, tapering to a point below, the curve being on the outer and lower edge, and the edges by which they are united together constituting a straight line from the frontals to the nose. Together, they have been said to bear no slight resemblance to the heart painted on a pack of cards.

They are vaulted—convex without and concave within—forming the crown of an arch. In the heavy draught-horse the nasals so unite as to constitute one tolerably regular and perfect arch; in the blood-horse the curve of each nasal is narrower, and they form two little arches with a depression between them along the suture. In either case two objects are effected, strength and lightness—the arched roof gives strength to a part exposed to injury from accident or brutality, and that with as little weight as possible, for the head being appended from the long lever of the neck, a very small addition of weight here would act with great mechanical disadvantage.

The nasal bones pursue their course down the face in some horses in a straight line; in others, there is a slight prominence towards the upper part; while in a considerable number a depression is observed a little lower down. Some equine physiognomists have imagined that this deviation in the line of the face affords some indication of the temper of the animal, and I believe there is a little truth in it.

Its Indication of Temper.—Of the horse with straight profile much cannot be predicated: he may be good or bad tempered, but is not often either to any excess. The one with a prominent Roman nose will not possess his comparative share of either the intelligence or the courage of the ancient illustrious proprietors of this projecting organ, but he will be an easy, good-tempered kind of beast, hardy, ready enough to eat, not quite so ready perhaps to work; he may be made to do his duty without any cruel urging, but he will have little pretension to speed or to blood. On the other hand, a depression across the centre of the nose generally indicates some breeding, especially if the head is small, but it is occasionally accompanied by a vicious, uncontrollable disposition.

There is another way, however, in which the nasal bones more certainly indicate the breed, viz. by their comparative length or shortness. There is no surer criterion of a well-bred horse than a broad angular forehead, prominent features, and a short face; nor of a horse of little breeding than a narrow forehead, small features, and lengthened nose. The comparative development of the head and the face indicates, with little error, the comparative preponderance of the animal or intellectual principle.

Structure of the Nasal Bones in the Horse.—Observe the manner in which the nasal bones are connected with the neighbouring ones; see their strangely-intricate mortised connexion with the frontal bones above. This gives a firmness of attachment between these bones, which no human ingenuity could have better contrived. A separation of one from the other is almost impossible. Here strength is principally wanted. The parts most concerned with the sense of smell lie underneath. There, the blow of brutal violence will oftenest fall; or should it fall lower, and the bone should yield, it would act with the increased power of a lever in separating the frontals from the bones above.

Trace the connexion with the superior maxillary bones below. It is necessary that the base of the arch should be firm, or it will support little weight, and resist little force. The buttress here is singularly and admirably contrived. There is not merely the overlapping or squamous suture of the temporal bone, but the superior

maxillary is split into two laminæ, and the nasal bones are received deeply between them, so that, whatever may be the force impressed on its crown, it is almost impossible that the arch of the nasal bones should give way at its base. Still lower down, where the process of the anterior succeeds to the superior maxillary, and the apices of the nasals are continued, unsupported, for two or three inches, and the attachment of these bones to those below ceases, the suture terminates with an increase of strength that almost defies injury, for the nasals are received equally deep between the plates of bone, and these bones are many times thicker than the superior maxillaries. The nasals are attached to each other by a denticulated suture as far as the æthmoid bone extends: when the cavity becomes a mere air-passage, they are less firmly united, and towards the apices have little more than a cartilaginous attachment. Even in the disposition of the bones of the nose there are evident proofs of admirable contrivance.

LECTURE II.

STRUCTURE OF THE NASAL CAVITY OF CATTLE, SHEEP, SWINE, AND DOGS, COMPARED WITH THOSE OF THE HORSE, AND WITH ONE ANOTHER.

Nasal Bones of the Ox.—From the great development of the frontal bones in *cattle* (in order to form a base for the horn sufficiently strong), all the bones of the face, and the superior ones of the cranium, are considerably diminished in size, and more or less displaced. The nasal bones in the ox are connected, as in the horse, with each other, and with the frontals, the lachrymals, and the superior and anterior maxillaries; but the mode of connexion is different, and the form of the bones is very dissimilar. Comparing the faces of the two animals together, the nasals are scarcely one-third so large in the ox as in the horse. Instead of their expanse above, connected with the frontal superiorly and posteriorly, and with the lachrymal laterally and inferiorly, and reaching as high as, or a little above, the tubercle of the lachrymal bone at the inner canthus of the eye, they are pushed down below the orbit by the protrusion of the frontal on either side between them and the lachrymals, and their superior and expanded curve within it receiving a process of the frontal, is changed for an insignificant process contained between the lower curvatures of the frontals: therefore the strangely-intricate mortised connexion between the frontals and the nasals of the horse is not found in cattle. The smaller development of this portion of the nasal bones does not require it; and they are not so much in the way of danger, for a blow aimed at the head of the ox by the biped or the quadruped would usually fall higher.

The nasal bone of the ox, contrary to that of the horse, enlarges as it proceeds downward, and has its greatest width where it lies between the lachrymal and superior maxillary bones. It then comes in contact with the process of the anterior maxillary, where it begins, in a very slight degree, to become narrow. Leaving this bone, it proceeds forward about half the length of the corresponding portion of the nasal in the horse, very little diminishing in width, and terminates in two apices or points; so that each bone being bifurcated, and the inner apex of each uniting, the nasal bones end in three points springing from an extended surface.

This portion of the nasal bone is short, because the anterior maxillary being in the ox devoid of teeth, is comparatively small; and it is bifurcated and wide, for the greater attachment of muscle and cartilage. The muzzle of the ox is very different from that of the horse. It is broad, thick, and strong, for it has to compress and to hold the grass firmly, until it is partly cut and partly torn by the pressure of the incisors of the lower jaw on the pad which occupies the place of the teeth in the upper one.

This bone presents a more regular convexity without than the nasal bone of the horse does, and its concavity is likewise different. We have not the large, almost uniform arch of the internal surface of the nasal bone of the horse, but a distinct gutter or channel, running along the upper portion of the arch; and the externally lower portion of the internal surface, although presenting a flat appearance, in point of fact, forms part of the larger arch of the whole cavity. This upper and smaller channel corresponds with the upper meatus in the nasal cavity of the horse—the interposed space between the turbinated and nasal bones; and as I shall have to show you that this is the portion of the cavity most connected with the sense of smell, while the others are mere air-passages, or for the discharge of fluids, we can account for the greater size of the meatus in the ox, who needs and has a more acute sense of smell than the horse, on account of his feeding more in the pastures, and not being so perfectly domesticated.

As the nasal bones are not so firmly united to the surrounding ones as in the horse, they are more likely to be displaced or fractured if a violent blow should fall on them; accordingly the interposition of this enlarged upper meatus will remove the turbinated bones beneath more out of the reach of danger.

Nasal Bones of the Sheep.—In the sheep we recognise another form and connexion

of the nasal bones—more developed, posteriorly, than those of the ox, but far less so than in the horse; enclosed above, like the ox, by a crescentic border of the frontals, instead of a process of the frontals being received between them—separated from all contact with the lachrymals, by a sharp process of the frontal insinuating itself between the nasal and lachrymal bones—pushed down into the face by the development of the frontals, but not so far as in the ox, and forming a more complex denticulated union with the frontals than in the ox, because a greater extent of border is opposed and the animal subject to greater danger from the brutality of those who ought to be his protectors, whether biped or quadruped. The nasal bones are not prolonged further below the posterior process of the anterior maxillary than in the ox, because here too that bone does not contain any teeth, and is of comparatively little bulk; and the bones terminate in two sharp points, as in the horse, and uniting together, form, as in that animal, one central and sharp projection. This, and the borders of the anterior maxillary, give attachment to muscles sufficiently powerful to enable the upper lip of the sheep to compress, and assist in breaking off the herbage; or that which would be wanting in power, is supplied by a peculiar quickness and jerkness of motion in the manner in which this animal grazes. The broad muzzle of the ox would be a deformity in the sheep. The sheep, too, in a state of nature, is possessed of considerable activity and speed, and requires thinner and more flexible nostrils, to expand and accommodate themselves to the increased and more laborious respiration. The nasal bones in the sheep are more arched and rounded than in the horse, with, in many breeds, the prominency on the superior part, which, in the horse, has been designated by the name of a "Roman" nose. There is also the same concavity of the nasal bones on their internal surface, forming the same enlarged superior meatus as in the ox, and for the same purpose.

Nasal Bones of the SWINE.—In the *swine* the nasal bones are forced farther down into the face than in the horse, ox, or sheep; but they are comparatively larger than in either of them, and present, also, points of difference suited to the situation and destiny of the animal. They are attached to the frontals in a slightly-curved direction across the face, and the suture is fully as complicated as, and considerably stronger than the same suture in the horse. It is both squamous and denticulated. The nasal bones are, as in the sheep, cut off from immediate contact with the lachrymal bones, by the interposition of a projection of the frontals on each side. The suture between them and the superior maxillary is mortised; the anterior maxillary sends up a deep and broad process more than half the length of the nasal, and the suture between is peculiarly strong; the bony nasal opening is not more than one-sixth part so large as in the sheep, and the apices of the bones form one point, sharp, yet rapidly widening, and brought forward to the anterior extremity of the maxillary. The suture between the nasals themselves is so intricate, that before the animal is two years old it is perfectly obliterated at the upper part, and the nasal cavity seems to be covered by one nasal bone only.

The slightest comparison between the face of this animal and that of either of the others will prove that strength was the object here intended to be effected, and strength towards the inferior part of the bone. In fact, the snout of the hog is his *spade*; and if he can get into the kitchen or flower garden, he will use it most effectually, to the great annoyance of the owner. The long and deep furrows which he ploughs in the new-sown field are not viewed with pleasure by the farmer. The hog was not intended to live merely on that which he finds on the surface, but often to dig deep for worms and roots. Have none of you, in your boyish days, followed a hog along the side of an old and somewhat damp hedge, and chased him away when he stopped and began to turn up the earth with his snout? You were sure to be rewarded by the discovery of the sweet-tasted earth-nut—delicious to the school-boy at least. In some parts of Italy, swine are employed in hunting for truffles, which grow some inches deep in the ground, and make a beautiful pickle and sauce, well known to the epicure. One of the swine is driven into a field, and there suffered to pursue his own course. Wherever he stops and begins to root with his nose, truffles are always found.

To make his nasal spade more perfect, an additional bone is added to the nose. It is short and trifacial, and placed immediately before the apices or points of the nasals, and connected with them, and with the borders of the anterior maxillary, by muscles, and also by strong cartilage and ligament. This makes the termination of the snout flexible, and it becomes a better instrument than the unyielding spade of the gardener. He turns up the soft soil with wonderful ease, and searches in every direction after his living and dead food, with a sagacity and dexterity and perseverance which nothing can elude. If you have seen a herd of swine, on the approach of a storm, running wildly about with straw in their mouths, uttering the most lamentable cries, twisting their snouts in every direction, and making the

most ridiculous grimaces, you will have proof enough of the flexibility of this prominent portion of the face.

To counteract the propensity and power to dig, the operation of "ringing" is performed by the village farrier and blacksmith;*

"And pigs he rung, and bells he hung,
And horses shod and cured."

The nasal bones of the hog are flatter than any that I have yet shown you. They can thus be so firmly united with the maxillaries, as to almost appear like one bone, and to have the power and strength of one.

The nasal bones of the hog contain within them the separate channel, but considerably shallower, that has been described in the ox and sheep as constituting the enlarged superior meatus. The hog, with all his filthy habits, is possessed of very acute smell, and, at times, of very delicate taste too. Of the delicacy even of *his* palate, the peach-orchards of North America afford sufficient proof; for he will not touch the fruit that has lain only a few hours on the ground, but will continue to watch whole hours together for a fresh windfall.

Nasal Bones of the Dog.—The nasal bones of the dog are very small. This is the case with all carnivorous animals. Instead of constituting the roof and part of the outer wall of the nasal cavity, as in the animals that have passed in review before us, the nasal bones form sometimes only a *portion* of the roof. The superior maxillaries here swell into importance, constituting the whole of the outer wall, and sometimes too, a part of the roof. The jaws are the weapons of offence and defence here, and as much space as possible is devoted to the insertion of those muscles which enable the animal to seize and to hold his prey. One of the most powerful of these muscles, the masseter, rises from the superior maxillary bone, and spreads over its whole extent, and therefore that bone is developed while the nasal is compressed into a small space. The substitution of a portion of cartilage instead of bone at the posterior part of the orbital ring, in order to give more room for the play of the coracoid process of the posterior maxillary, round which the temporal muscle is wrapped, is a contrivance of the same nature. The scent of the dog is not sacrificed or impaired by the diminution of the nasals, for the cavity enlarges considerably upwards, and is occupied chiefly by the æthmoid bone, which, the olfactory nerve first passing through it, and the greater portion of nervous pulp being spread upon it, seems to have most to do with the sense of smell.

The nasal bones in the dog are, in shape, the reverse of any that we have yet considered. They commence, indeed, as high up in the face as those of the horse, their superior extremity being opposite to the lachrymal tubercle; but they commence in an apex, or point, varying in sharpness in different breeds, and in some almost as sharp as any that we have seen at the lower extremity of the nose in other quadrupeds. These points, forming together one sharp projection, are received between lengthened processes of the frontal bone on either side. In some breeds, these processes extend nearly one-third of the length of the nasals. The superior maxillary takes the situation of the nasal; it pushes the lachrymal bone out of its place, and, indeed, almost annihilates it; and it reaches the frontal, and expands upon it, and forms with it the same squamous denticulated suture which we have seen in the nasal in all the rest. The action of the muscle, for the development of which all this sacrifice is made, is exceedingly powerful. The strength of the masseter in the dog, and in all beasts of prey, is almost incredible. A lion will run at a great pace with a tolerable sized steer in his mouth. In many old dogs the sutures between the superior maxillary and frontal bones are, nearly, and that between the nasal and frontal and superior maxillary, quite effaced. The whole is one solid mass of bone.

As the nasal bones proceed downward, they become a little wider; they unite with a long process of the anterior maxillary, as in the swine, for the purpose of strength, and then terminate in a very curious way. They have their apices or points on the outer, and not the inner, edge of the bone, and these apices or points are so contrived, that, lying upon and losing themselves on the processes of the anterior maxillary, they complete, superiorly and posteriorly, that elliptical bony opening into the nose which was commenced by the anterior maxillary, anteriorly and inferiorly. The nasal cavity of the dog, therefore, and of all carnivorous animals, terminates very differently from what it does in herbivorous animals, by a somewhat circular opening,

* The ring is passed through what appears to be a prolongation of the septum, between the supplemental or *snout*-bone, and the proper nasal. The animal cannot then get any purchase, to use his snout with effect, or the pain which he suffers by the ring pressing upon the part soon tames him. But the ring is apt to break, or in process of time it wears out, and must be replaced, and this is a painful operation. A better way is, when the pig is young, to cut through the cartilaginous and ligamentous prolongations by which the supplemental bone is united to the proper nasals. The divided edges of the cartilage will never unite again, and the snout will always be powerless.

running more or less into the form of an ellipse.*

FRACTURE OF THE NASAL BONES OF THE HORSE, AND ITS TREATMENT.

Cause.—Fracture of the nasal bones of the horse will sometimes occur from falling, or a kick from their companions, or the brutality of their attendant.

Effects.—It is generally accompanied by laceration of the pituitary membrane, and hæmorrhage. The hæmorrhage may usually be arrested by the application of cold water. In spontaneous hæmorrhage this does not often succeed; but here we know precisely the spot whence the bleeding proceeds, and at which the cold is to be applied. The fractured portion of bone is usually depressed, and the calibre of the little open space which the æthmoid and turbinated bones leave in the nostril being diminished, difficulty of respiration occurs. I had once a case of fracture of both nasals. I was enabled to elevate the depressed parts; but there was so much inflammation and swelling that the animal was threatened with suffocation, and the operation of tracheotomy was resorted to.

Treatment.—You will consider the situation of the fracture. If it be on the crown of the arch, and but a little removed from the suture between the nasals, it is over the direction of the superior meatus, and by means of an *elevator*, or curved rod of steel, cautiously introduced into the meatus, the depressed portions may be raised. The tuberculous termination or appendix of the superior turbinated bone may be seen if the nostrils are lifted; a little above it, the entrance of the meatus may be reached and traced through its whole extent, by pursuing a direction close to the roof of the nose, parallel with the septum, and a quarter of an inch from it. If the depressed portions cannot be thus raised, the trephine must be applied a little above or below the fracture, and the elevator introduced through the aperture. If the fracture be in any other part of the bone, it will be impossible to reach it with the elevator, for, with the exception of a very small space, about half way down the nasal bone, and on the suture between the nasal and the superior maxillary, the turbinated bones will be in the way. The trephine must then be resorted to in the first instance.

Cautions.—It is necessary that the wound, if there is any, should be covered: a compress should be kept on it, not fastened round the jaws with a bandage, for the patient must eat, but attached to the ring of a snaffle below, and to some of the head-gear, as may be most convenient, above. If the fractured parts protrude outwardly, which however will rarely occur, they must be replaced, if possible, in their natural situation, or dissected out, or cut off. Perhaps it may be necessary to use considerable force in detaching the loosened bone.

A writer in one of the French periodicals relates a case in which a horse was violently kicked, and there was a contused wound, with depression of the bone. He applied the trephine, and extracted fifteen splinters. Finding pus in the maxillary sinus, he opened that, and the case terminated well. Here is a specimen of dreadful fracture of the nasal, frontal, and lachrymal bones, with considerable caries. The history of the case I do not know.

Progress.—I will suppose that you have replaced the fractured edges of the bone; reunion has taken place; the external wound has healed; and, except a slight discharge from the nostril, occasionally purulent, the animal appears to be well. Do not be too sanguine. I shall have to speak to you of the structure of the nasal membrane, which is vascular and highly sensible; and of the continual sources of irritation to which it is exposed, and you will then deem it *possible*, at least, that inflammation and ulceration may continue, and at length degenerate into that peculiar form which seems to be, as it were, the natural termination of every injury of the membrane of the nose, and of every chronic disease of the frame. The horse may eventually become glandered, therefore do not be too sanguine. Let your prognosis, even in the most favourable case, be exceedingly guarded.

If, however, you escape glanders, there may be some troublesome sequelæ of the case. Some small portion of bone may remain depressed, or the membrane may be thickened by inflammation. The nasal passage will then be obstructed, and a difficulty of breathing will ensue in rapid action, very much resembling roaring. Ozena, or the establishment of a stinking ulcer, which will baffle all your attempts to get rid of the fœtor, may follow. Enlargement and suppuration of the submaxillary glands, which sympathise with every affection of the nasal canal, may be produced by the chronic irritability that will occasionally be left. If the fracture has taken place over the lachrymal duct, there probably will be permanent obstruction of that canal, and

* Of birds, and they will sometimes be our patients, I will only say, that the bone of the upper mandible represents the superior and anterior maxilliaries, the palatine and nasal bones, and that in some cases sutures may be observed pursuing their course almost as regularly as those which divide the corresponding bones in the mammalia. The openings into the nose are found, however, not at the extremity of this bone, but in different situations, according to the species, on the superior surface of the mandible.

fistula lachrymalis will succeed. You will therefore undertake the case with reluctance, and be well guarded in the opinion you give of the result.

Cases.—There is a case of a horse having received a kick on the upper part of the nose. There was, probably, fracture, but the part was not examined with sufficient care to ascertain its existence. The animal suffered considerably for awhile, and then seemed to get well. Six months afterwards there was evident difficulty of breathing after unusual exertion. The right nostril appeared to be partially obstructed, and, on being examined against the sun, a tumour was discovered high up. Six months more were suffered to pass away. The difficulty of breathing was considerably increased; the right nostril was completely obstructed, and, at about two inches from the orifice, an elongated bony tumour was perceived growing over the suture of the nasal and superior maxillary bones. The horse was thrown, and so fixed, that the nostril should be dependent, and the blood should not flow into the back of the mouth, which might have suffocated him. The false nostril was slit up as far as the union of the nasal with the anterior maxillary; the lips of the wound were held aside, and, by means of a chisel and mallet, the tumour was detached: it weighed ten ounces. The lips of the wound were then brought together; nothing else was done, and, in six weeks, the horse was well.

There is another singular account of a horse coming within the reach of the sail of a windmill that was working very quickly. The blow fell on the side of the face, and fairly took away the whole of the nasals, leaving the nasal cavity completely exposed. The wound in a manner healed, and he was able to go to work again, and has continued to work for two or three years in this state, the part being merely covered by a piece of leather; and not only is there no glanders, but his health does not appear to be in the least impaired. I regard these cases, however, as exceptions to a general rule, and should always fear the result, if much injury had been inflicted on the Schneiderian membrane.

*** The lecture introductory to Mr. Youatt's present course was delivered on the 5th of October, and will be found in No. 424 of THE LANCET, page 73 of our present Volume. The above two lectures followed on the subsequent days, since which time Mr. Youatt has obtained the sanction of the Council of the University for establishing a veterinary hospital in connexion with that institution.

LONDON PHRENOLOGICAL SOCIETY.

November 20th, 1831.

PAPER READ BY

DR. ELLIOTSON,

IN REPLY TO THE

ATTACKS ON PHRENOLOGY,

MADE DURING THE CURRENT YEAR.

(*Concluded from page* 294.)

DR. ELLIOTSON, *President, in the Chair.*

Mr. FEARNSIDE presented to the Society the skull of a Chili Indian.

The President having then left the Chair, which was taken by Dr. Moore, he proceeded to read the concluding portion of his paper:—

GENTLEMEN,—Many of the members, I find, consider that the two individuals whose conduct I laid before the Society at our last meeting were not worth powder and shot. However that may be, I have now to lay before the Society some account of the objections which, in the course of the present year, have been brought against phrenology by one whom no member will regard as insignificant or obscure, or as prompted either by a desire to acquire favour with the multitude by administering to ignorant prejudices, or by any rancorous feeling. If Mr. Godwin writes erroneously, he writes what he believes, and solely for the purpose of disseminating what, to him, appears truth calculated to benefit mankind, and of acquiring honourable reputation.

Mr. Godwin, in his recent *Thoughts on Man*, commences by regretting that the task of refuting phrenology had not fallen on another "whose studies were more familiar with all the sciences which bear more or less" upon phrenology, and confesses his remarks "to be nothing more than a few loose and undigested thoughts upon the subject." Would any one, after this, imagine that Mr. Godwin would, in a subsequent passage, take upon him to assert, that as phrenology "is, perhaps, the most rigorous and degrading science that was ever devised, so it is in almost all instances founded upon arbitrary assumptions and confident assertions, totally in opposition to the true spirit of patient and laborious investigation and sound philosophy." Does Mr. Godwin wish us to consider this strange assertion, this hard judgment, as nothing more than "a loose and undigested thought of one who is not very familiar with all the sciences which bear upon the topic?

To be consistent, he must; and if he does, he must pardon us if we give but little weight to it. What weight can be attached to any of his remarks we will now examine.

One of his first objections is, that phrenology has advanced too rapidly to be true. He acknowledges "that there is a science in relation to the human head, something like what Plato predicates of the statue hid in a block of marble. It is really contained in the block; but it is only the most consummate sculptor that can bring it to the eyes of men, and free it from all the incumbrances which, till he makes application of his art to it, surround the statue, and load it with obscurities and disfigurement. The man who, without long study and premeditation, rushes in at once, and expects to withdraw the curtain, will only find himself disgraced by the attempt." Would any one credit, that immediately after this objection, Mr. Godwin confesses to us that Gall declares "he spent THIRTY YEARS in the private meditation of his system, before he began to promulgate it!" Surely this was not "rushing in at once, and expecting to withdraw the curtain," and thus deserving to "find himself disgraced by the attempt." And, again, surely Mr. Godwin has no right to *assume* that Gall is not a consummate sculptor, and well able by such perseverance to bring out before the eyes of men, the statue which Mr. Godwin actually allows to exist within the block. If Gall spent thirty years in investigation, and nearly five-and-thirty years have since elapsed, during which Gall and others have still pursued these investigations and added to the science, Mr. Godwin has no right to say, in implied allusion to phrenology, that while real science is of slow growth, discoveries which are brought to perfection at once, are greatly exposed to the suspicion of quackery, and, like the ephemeron fly, are born suddenly, and may be expected to die as soon. Mr. Godwin must be informed, that as phrenology was not of sudden growth and immediate perfection, so, as it still exists, it has endured longer than the ephemeron fly, and never was supported by such a host of facts, never owned so many votaries, as at the present moment.

The same admission of the reality of such a science as phrenology, and the same objection to its present existence on the groundless assertion of Gall having at once split the head into the several,—the twenty-seven—compartments, again occur:—"I would say that there *is* such a science, *attainable* probably by man, but that we have yet made scarcely any progress—scarcely *any* progress,—in the acquiring it." "It is reasonable to believe that a certain structure of the head is in correspondence with the faculties and propensities of the individual." "But there is a wide difference between this general statement, and the conduct of the man who at once splits the head into twenty-seven compartments." "Craniology, or phrenology, proceeds exactly in the same train as chiromancy, or any of those pretended sciences which are built merely on assumption or conjecture. The first delineations presented to the public, marked out the skull into compartments, in the same way as a country delineated on a map is divided into districts. Geography is a real science, and accordingly like other sciences, has been slow and gradual in its progress. At an early stage, travellers knew little more than the shores and islands of the Mediterranean. Afterwards they passed the Straits of Hercules and entered into the Atlantic. At length the habitable world was distributed into three parts, Europe, Asia, and Africa; more recently, by many centuries, comes the discovery of America. It is but the other day, comparatively, that we found the extensive island of New Holland in the Southern Ocean. The ancient geographers placed an elephant on the vacant parts of their maps to signify that of those parts they knew nothing. Not so Dr. Gall. Every part of his globe of the human skull, at least with small exceptions, is fully tenanted, and he, with his single arm, has conquered a world."

No one would credit that Mr. Godwin had in a preceding page acknowledged his acquaintance with the fact, that Gall spent *thirty years* in splitting the head into twenty-seven compartments; and I believe, in truth, that it was not before the lapse of still more years, that he pointed out the whole of the twenty-seven. Mr. Godwin should also know, that 600 years ago the head was mapped out by Albertus Magnus; and again by Petrus Montagnana 400 years ago; and again by Ludovico Dolce 300 years ago; and that again a map was published 199 years ago;—that Gall's modern map had successive predecessors, like the maps of geographers. Let it be remembered likewise, that so far was Gall from mapping out the cranium at pleasure, that he left for future discoveries all the space under which Dr. Spurzheim has placed the faculty of inhabitiveness; all the space in which Dr. Spurzheim has placed the faculty of hope; all the space in which Dr. Spurzheim has placed the faculty of time; all the space in which Dr. Spurzheim has placed the faculty of order. If Gall did not place an elephant in the vacant parts of his heads, he placed stars and crosses to signify his ignorance of many spots. So slow has discovery been since Gall's publication, that Spurzheim pretends to have dis-

covered but six new organs; and since Spurzheim's publication, one only was discovered, a few years ago at Copenhagen, and some still more recently by Dr. Vimont, in France. Gall left faculties and organs of faculties to be discovered, and modestly expressed a hope that what he had done would facilitate the researches of his successors. Such was his severity of investigation, that while he felt convinced that there must be a faculty of "order" and one of "time," he never could satisfy himself as to the part of the head in which those faculties resided. On some points,—for instance, the disposition to marriage,—he could not satisfy himself whether there was a particular faculty, or whether the actions we witness were the combined result of faculties already ascertained. But on those organs which he felt satisfied he had discovered, how immense were his labours! What a search after instances of every faculty in predominance and in defect did he not institute! For years he accumulated evidence. He travelled from country to country; he mixed in society; he visited prisons and schools, and all the diversified collections of mankind, braving ridicule and malice and contempt; spending all his professional gains in the acquisition of facts. When he had collected the casts of individuals who were ascertained by him to be remarkable for the same talent, or the same propensity, he would place them side by side upon his table, and contemplate them month after month, till he had discovered in what particular point they agreed or disagreed, and when he found he had discovered the locality of the faculty for which they were both remarkable, he would attempt to verify or disprove it by still further researches. He took not a skull before him and mapped it out in the beautiful arrangement of faculties which phrenology teaches us, but he discovered faculty after faculty, and locality after locality, as chance presented him with facts in his persevering researches, the one discovered last often situated very remotely from that which was next to be discovered. The beautiful phrenological arrangement of the organs of the faculties bears the impress of divine design. Those which are common to brutes and ourselves, those which ought to be in subjection to higher faculties, are all situated below; while those which are more noble,—benevolence and sanctity of reason,—he found above, brute after brute rising in mental character, and likewise in the height of its organs, till man is reached, whose moral and intellectual faculties have, all, organs corresponding with them, placed above the rest in lofty elevation, so that to heaven he raises a front, serene, godlike, erect, and bears upon his forehead the very stamp of superiority of mind. The mighty intellect of Gall could not devise this arrangement,—this relative position of the classes and individual faculties. He made the discovery; but the work was the work of the Almighty. If any man sees the wisdom and power of the Deity, it is the phrenologist.

Another objection of Mr. Godwin is easily answered, and, like the first objection mentioned, is inconsistent with another of his assertions. We find, says Mr. Godwin, so many analogies between the thinking principle and the structure of what we call the brain, that we cannot but regard the latter as in some way the instrument of the former. "Nothing can be more analogous to what the deepest thinkers have already confessed of man, than to suppose that there is one structure of the brain better adapted for intellectual purposes than another. There is probably one structure better adapted than another, for calculation, for poetry, for courage, for cowardice, for presumption, for diffidence, for roughness, for tenderness, for self-control, and the want of it, even as some have, inherently, a faculty adapted for music or the contrary." "But," continues he, "it is not reasonable to believe that we think of calculation with one portion of the brain and of poetry with another." The objection, therefore, to diversity of office in different parts of the brain is, that it is not reasonable. But whether reasonable or not, Mr. Godwin must admit it, if he admits, as he does, that one structure is better adapted for calculation, another for poetry, another for music, another for courage, another for tenderness, and so on. For, according to him, the whole brain does all. Now, when a poet, with his *whole* brain of a structure for poetry, is also a musician, he thus has his whole brain, at *the same time*, of a structure for music. This is possible, on Mr. Godwin's doctrine, but *possible* only because the structure for poetry and the structure for music, may be the *same*. But then another poet has no music in his soul, knows not "God save the King" from "Rule Britannia." The structure fit for poetry is, therefore, not the same structure as is fit for music, and yet the first poet was excellent in both poetry and music. The two talents, therefore, cannot depend upon the same structure of the *whole* brain. One calculator is presumptuous, and, if so, it is because the same structure of the whole brain must be fit for calculation and pride. But another calculator is modest. The same structure of the whole brain cannot, therefore, give the talent for calculation and the feeling of pride. The inevitable inference is, that different parts of the brain are destined for poetry,

and for music, for calculation, and for the feeling of pride. How can Mr. Godwin think it unreasonable, that different parts of the brain should have different offices, one for poetry, another for music, and yet allow that there is such a science as phrenology, though yet undiscovered, or to use his words, which has scarcely yet made any progress?

Another objection may easily be answered. "Certain it is," says Mr. Godwin, "from the nature of attention, and from the association of ideas, that unity is one of the principal characteristics of mind. It is this which constitutes personal identity; an attribute which, however unsatisfactory may be the explanations that have been given respecting it, we all of us feel; and this lies at the foundation of all our voluntary actions, and all our morality. Analogous to this unity of thought and mind, is the arrangement of the nerves and the brain in the human body. The nerves all lead up to the brain, and there is a centrical point in the brain itself, in which the reports of the senses terminate, and at which the action of the will may be conceived to begin. This, in the language of our fathers, was called the seat of the soul. We may, therefore, without departing from the limits of due caution and industry, consider this as the throne before which the mind holds its court. Hither the senses bring their reports, and hence the sovereign will issue his commands. The whole system appears to be conducted through the instrumentality of the nerves, along whose subtle texture the feelings and impressions are propagated. Between the reports of the senses, and the commands of the will, intervenes that which is, emphatically, the office of the mind, comprising meditation, reflection, inference, and judgment. How these functions are performed we know not, but it is reasonable to believe that the substance of the brain, or some part of the brain, is implicated in them."

Now, in the first place, I know of no such central part of the brain. I never saw it, nor ever had it pointed out to me; nor do anatomists pretend to have discovered such a centre. Descartes believed in the hypothesis of a soul, and had a whim that the soul required a seat, and so settled on the pineal gland, but only to make a standing joke amongst all anatomical writers and teachers. Whether there really is a central point, though yet undiscovered, connected with all other parts of the brain and nervous system, is another question. But, in the second place, this uniting of all our thoughts and feelings, this concentration of them all into that feeling of self, of personality, of identity, which all must acknowledge, is not incompatible with the distinct offices, of distinct parts of the brain. As all parts of the brain are connected, although one feeling or faculty should be exerted in one spot, and another in another, the combination of the several kinds of faculties and feelings of the different parts into one common feeling of self, is nothing more than we should expect. If the various constituent parts of the brain could be cut off from connexion with each other, then, indeed, might we expect a want of unity, a want of feeling of single personality and identity. Were such a separation possible without disturbance of function, two or three, or more selves—two or three or more personalities, might exist. But granting that there must be a common centre, still the occurrence of distinct functions in the different parts connected with this centre, is nothing more than what we might expect. The eye is the organ of vision,—the ear of hearing—the tongue of taste—the nose of smell—and the surface of touch; yet identity and personality and unity are preserved. Why may not one part of the brain execute the function of discriminating musical sounds; another the function of appreciating numbers; another give rise to the feeling of pride; another to the feeling of benevolence, and their operations, as well as the operations of the visual, auditory, olfactory, or gustatory nerves, be all connected with the common centre, the supposed seat of the supposed soul? The state of the stomach excites or removes the feeling of hunger, and hunger is felt at the stomach; but the unity of feeling, of personality, is not thereby affected. Why should not the soul upon its throne take account of all these proceedings, as well if each kind is performed by a separate part of the brain, as if each is performed according to Mr. Godwin's supposition, by all the mass at once, round and about the throne? The case is precisely the same.

Whether it is reasonable or not, and Mr. Godwin says it is not, to believe that we think of calculation with one portion of the brain, and of poetry with another, it is surely not unreasonable to believe that we may calculate with one portion of the brain, and experience poetic feeling with another. It is not more unreasonable than to believe that we see with the eye and feel with the finger.

Further on, Mr. Godwin advances,—that science, to be of a high and satisfactory nature, ought to consist of a deduction of causes and effects, showing us, not merely that a thing is so, but why it is so, and why it cannot be otherwise. If this be an objection to phrenology, it is an objection to all other natural sciences. The chemist cannot explain why an acid unites with an alkali, and why one acid will separate

another, and why this cannot be otherwise. Yet men study chemistry. The astronomer cannot tell why the earth revolves round the sun rather than round another heavenly body, and that in 365 days, and why it cannot be otherwise. Yet men study the science of astronomy. The mineralogist cannot tell why one mineral presents prisms, and another cubes, and why it cannot be otherwise; yet we study the science of mineralogy. "Though," continues he, "the narrowness of human wit may often drive us to this, yet it is essentially of lower order and description. As it depends for its authority upon an example, or a number of examples, so examples of a contrary nature may continually come in to weaken its force or utterly subvert it; and the affair is made still worse when we see, as in the case of craniology, that all the reasons that can be adduced (as here, from the nature of mind) would persuade us to believe that there can be no connexion between the supposed indications, and the things pretended to be indicated."

Now all the reasons that can be adduced, would persuade us that there *must* be a connexion between the supposed indications and the things supposed to be indicated. These indications are—size. Power of function throughout the body is always, *cæteris paribus*, commensurate with size. The elephant has larger muscles given him than the flea, because its muscles have more to do. Birds of acute vision have far larger optic nerves than those whose vision is not remarkable. The acutely smelling savage, and the bloodhound, have far larger olfactory nerves than ourselves. Those cows and goats give most milk, *cæteris paribus*, which have the largest udder. Power of function is always greater in a *given* structure, in proportion to the bulk of that structure. Bulk, mass, is but one item. The largest muscle, the largest nerve, may be good for nothing, but if the structure is given, if *cætera* are *paria*, then the greater the mass the greater the work that can be done. This is a law throughout nature, and it exists of necessity. We cannot conceive the matter to be otherwise. Therefore the larger the brain, and consequently the larger the head, the greater must Mr. Godwin, who allows the brain to be the organ of mind, allow the mind to be, the words *cæteris paribus* never being omitted. The anti-phrenologist Majendie allows this. He says that it is rare for a man distinguished for his mental faculties not to have a large head. Therefore, if different parts of the brain have different functions, the man who manifests a stronger function in any of these different parts, is likely, *a priori*, to have some one part of his brain and head larger in proportion. If it be so, there is nothing wonderful. The wonder would be if it were not so.

But to come to the fact. "Craniology or phrenology," says Mr. Godwin, "proceeds exactly in the same train as chiromancy, or any of those pretended sciences which are built merely on assertion or conjecture. This is quackery, and is to be classed with chiromancy, augury, astrology, and the rest of those schemes for discovering the future and the unknown, which the restlessness and anxiety of the human mind have invented, built upon arbitrary principles, blundered upon in the dark, and having no resemblance to the march of genuine science." (Gentle language from one who has never made a single observation upon the science of which he thus speaks!)—"The special use and functions of the remoter parts of the brain (those which are not the limited seat of the soul) we are unable to determine, so utterly obscure and undefined is our present knowledge of the great ligament which binds the body and the thinking principle." To come, however, to fact. The phrenologist adduces instances innumerable of persons with such and such a faculty, (be it talent, sentiment, or propensity) strong, and a proportionate bulk of a certain part of the head. He adduces instances innumerable of such and such a faculty deficient, and a proportionate smallness of the same part, and asks for exceptions from his adversaries, but none are adduced. Will a *philosopher* despise this truth? Will he not examine for himself, before he denies what so many declare, and does he think that those who *know* all these facts will disregard them, because *he* chooses to say that these facts are nothing? If he do, he must bear with our pity.

Mr. Godwin asserts that "the majority of the judgments that have been divulged by the professors of this science, have had for their subjects the skulls of men whose habits and history have been already known." Now this may be true or not. It is immaterial. If a judgment had never been pronounced upon a head by a phrenologist ignorant of the person to whom the head belonged, phrenology would be equally demonstrated. If every head examined, after the character of the individual is known, proves in harmony with phrenology, the science is just as much confirmed by each head, as if a judgment had been pronounced *previously* by a professor. *Nature* affords an equal proof in each instance. In the one, besides this proof, the *professor* only shows his skill.

Mr. Godwin objects to Thurtell's head having shown "an unusually large organ of benevolence." It showed a full organ of benevolence, but not one unusually large.

Let us, however, forget the head and read Thurtell's life. Did he, or did he not, display in innumerable passages of his life, strong benevolent feelings? It is a fact that he did;—that he cried like a child at a tale of distress, and gave his last shilling to his friend in distress. If all this is true, why should it not be true that he had a large organ of benevolence? Mr. Godwin must know that some are purely benevolent; some are purely malignant, and some are benevolent and malignant at intervals, just as the lamb is all gentleness, the tiger all ferocity, and the hound ferocious to its prey and gentle and affectionate to its master. If such incongruities exist in character, they may be expected in the head, and the phrenologist must be pardoned for finding a large benevolence, though a still larger destructiveness, in the murderer Thurtell.

"Many of Gall's organs are a libel upon our common nature," says Mr. Godwin. I fear if this be an objection we must object to the declarations of Scripture, and to most pages of history. Each must be a libel on our common nature; but only a libel according to *English* law, according to which truth is a libel. "The heart of man, says Scripture, is deceitful above all things, and desperately wicked," and "out of the heart proceed murder, lust," and I know not what else. History is little more than a catalogue of murderers styled heroes, and murders styled battles, and a catalogue of vices and errors of all descriptions. It is to be remembered that if Gall designated an organ the organ of murder, he did not mean that it was given for murder, but that *through its operation* murder is committed when not restrained by conscientiousness and benevolence, merely to just indignation.

Mr. Godwin contends, that "a human being cannot be born with an express propensity towards any one of the infinite pursuits and occupations which may be found in civilised society, yet that he may be fitted by his external or internal structure to excel in some one of those pursuits rather than another. But all this," continues he, "is overlooked by the phrenologists. They remark the various habits and dispositions, the virtues and the vices, that display themselves in society as now constituted, and at once, and without consideration, trace them to the structure that we bring into the world with us."

This is incorrect. Phrenologists, when they declare a head to have belonged to a cruel man, never declare that it belonged positively to a murderer; because they speak only of inclinations, not of deeds; and if they strongly suspect that the individual has not only been cruel, but was actually a murderer, they never pretend to say whether he murdered by bludgeon, or pistol, or pitch-plaster. Yet I have known correct judgments often given even as to the mode of murders,—as to whether the murder was committed by open violence, mere ferocity, or by secret, cowardly means, such as poison. Phrenologists do not point out any express propensities to our infinite pursuits, but only the general strength of each propensity, leaving its course to be explained by external circumstances. If they declare a man to have a strong tendency to construction, they never declare that he is by instinct a watchmaker or a civil-engineer. The very facts quoted by Godwin against the judgments of phrenologists, would show him, if he had reflected one instant before he wrote, that phrenologists carefully take into account the influence of external circumstances.

He gives the following quotation from Dr. Spurzheim's work:—"We were much surprised to be told, that a man in whom Dr. Gall had not discovered the organ of representation, possessed extraordinary abilities in imitating the voices of animals; but we were convinced after inquiries, that his talent was not a natural one, but acquired by study. He related to us, that when he was a Prussian soldier, garrisoned at Berlin, he used to deceive the waiting women in the Foundling Hospital by imitating the voice of exposed infants, and sometimes counterfeited the cry of a wild duck, when the officers were shooting ducks." Here was an instance of phrenologists allowing the operation of external circumstances. The man had not an ordinary development of the organ of the faculty of imitation. Yet accidental circumstances led him to cultivate it assiduously, to make the very utmost of it: and such were the results detailed by Gall and Spurzheim themselves. The doctrine of phrenologists is this,—That all, excepting the malformed, have every organ of every faculty;—that if an organ is very large, it will lead the individual to action, in spite of unfavourable external circumstances;—that if it be very small, the most favourable external circumstances will excite it but to moderate power; but that if an organ be of middle development (healthiness of structure being supposed in all cases), its activity and power will depend strikingly upon external circumstances. It is upon the last organisation that education and all external circumstances exert full influence,—an influence which no phrenologist is insane enough to deny, but which the phrenologist *only* can, by observing the organisation, accurately prognosticate.

He gives, also, the following phrenological quotation:—"Every person was desirous of knowing what Dr. Gall would say about T——, who was known in the house

as a thief full of cunning, and who, having several times made his escape, wore an additional iron. It was surprising that he saw in him far less of the organ of cunning than in many of the other prisoners. However, it was proved that examples, and his conversations with other thieves in the house, had suggested to him the plan for his escape, and that the stupidity which he possesses, was the cause of his being retaken."

Now this case most happily illustrated phrenology. Here was a man anxious to get at liberty, but with a small organ of stratagem, and all the instructions given him by the most cunning of his fellow prisoners, would not make him cunning enough to devise successful means for making his escape.

He gives a third quotation. "Of another, Dr. Gall said, his head is a pattern of inconstancy and confinement, and there appears not the least mark of the organ of courage. This rogue had been able to gain a great authority among his fellow convicts. How is this to be reconciled with the want of constancy, which is the organisation it plainly indicates? Dr. Gall answered, He gained his authority, not by courage, but by cunning." Surely there is nothing wonderful or evasive in this. How many rise to eminence in some professions, not by learning and talents, but by cunning! This no one will for a moment doubt, and no one could object to a phrenologist for declaring the intellectual organs to be small in such persons, however great their eminence, and their organs of stratagem, perseverance, and love of property, all to be large.

"Nor can any-thing be more ludicrous than this author's distinction," says our anti-phrenologist, "of the different organs of memory, of things, of place, of names, of language, and of numbers,—organs which must be conceived to be given in the first instance, long before names, or language, or numbers, had an existence."

Ludicrous as this may be, it is true that metaphysicians had, long before the time of Gall, distinguished memory into the memory of facts or things—*memoria realis*; the memory of words—*memoria verbalis*; and the memory of places—*memoria localis*. It is true that a person who has strong memory for words, knows many languages, or can repeat hundreds of lines, has often little memory for places; and often, that he who can recollect countless facts, cannot get a few dozen lines by heart, or easily learn a foreign language. It is true that the phrenological organisation agrees with the native strength of the particular kind of memory. It is true that in disease a person often loses one sort of memory, while another remains strong; that he forgets all names, but remembers persons, places, and facts.

After all, phrenologists do not allow such a faculty as memory. They consider it an attribute or mode of many faculties.

Mr. Godwin objects that we know little of the characters of men; that every human being is a mystery to his fellow. But phrenology was founded upon undoubted characters. We see by his pictures, his statues, that a man is a painter or a sculptor. We see by his poetry that a man is a poet. We see, moreover, by the character of his works, what are many of the feelings of the painter, the sculptor, and the poet. We know that he who has committed a number of cold-blooded murders is cruel. We know what politicians have been men of talent, what politicians men of mere cunning. Not the whole, but much of every conspicuous person, and of every acquaintance, is fully known; and it is upon such undoubted facts that phrenology is founded; and it is upon the development of the heads of the brute creation, untutored, but all varying in character, both as to the species and the individual, that phrenology is also founded; and the two sources of facts harmonise in their results.

If Mr. Godwin will examine the heads of those only whose talents and disposition on some one point at least is unquestionable, and if he will examine the heads of the brute creation, *which he may easily do by means of the splendid work now publishing by* Dr. VIMONT, I do not despair of his becoming, with his fine organisation, an ardent phrenologist.

One objection only remains, and that is, that phrenology is a system of fatalism—a curious objection from Mr. Godwin, whose "Caleb Williams" is an unfortunate being impelled through existence by one irresistible passion. But the answer is, that phrenology leaves the question of fatalism as it finds it—neither strengthened nor impaired. We all have our natural and peculiar degree of every talent and every feeling, and phrenology does but give reason for the proportion which each man possesses. Dr. Johnson's answer to all fatalists must be given to those fatalists who happen to be also phrenologists. "*All theory* is against the freedom of the will; *all experience* for it. We know that we are free, and there's an end on't."

I now proceed to lay before the Society the numbers that have appeared of Dr. VIMONT's magnificent folio work upon "*The Anatomy and Phrenology of the Nervous System of Man and Brute.*" Four numbers have appeared containing 23 plates, including 70 figures. We have nothing in

anatomy, human, comparative or morbid, to be compared with them. They are not only most exquisite as works of art, but, in accuracy, *surpass any-thing that has preceded them. Every measurement of each bone and process is exact to a hair's breadth of the original. Dr. Vimont superintended the execution of each figure himself. It is the result of twelve years' incessant and exclusive study of the habits of 1500 living brutes, and of the preparation of 2500 skulls, 400 of the brains of which he modelled in wax.

Dr. Vimont, like most other young men, was influenced by the authority of orthodox teachers and writers, and laughed at Gall. He saw, however, that to refute Gall, something more must be done than to sit down in a study and scribble objections, and he, therefore, determined on making so many observations in nature, that *proof* might be brought against the mighty German. He began by dissecting various *species* of brutes, and by rearing *individuals*, closely watching their habits, and then dissecting them. But as he proceeded, he found Gall not disproved, but confirmed, and the present work is the result,—a work containing such a mass of facts, that its appearance forms an era in phrenology; and what adds to its value is, that taken as a work of mere anatomy, human and comparative, no anatomist, or zoologist, can dispense with it, and he who studies it merely as an anatomist, cannot shut his eyes to the fact of every example being in harmony with,—being a proof of, phrenology.

To this work, and nature at large, we shall now refer our adversaries in future, instead of answering their silly reviling and sophistry, while they neither controvert our facts, nor adduce exceptions. We shall say, "Believe for the very works' sake."

Before I close this paper, I must announce to the meeting that I have received a letter from the younger Broussais, communicating my election as an honorary member of *a Phrenological Society just established in Paris*, of which he is the secretary. It is glorious to see that the Societies of Edinburgh and London, the latter of which it will ever be the happiest reflection of my life to have founded, struggling as they have done, through ridicule and neglect, have existed long enough to be followed by another, in the second city of Europe. They will be rejoiced to learn that its ordinary members amounted to 108 three months ago, and have among them the names of ANDRAL, BROUSSAIS, CLOQUET, FALRET, LE GALLOIS, ROSTAN, VOISIN, TESSIER, ROYER of the *Jardin des Plantes*, DAVID the sculptor, APPERT the editor of the *Journal des Prisons*, JULLIEN the editor of the *Revue Encyclopédique*, FERRUS physician to the *Bicetre*, LENOBLE Chief of the *Bureau de l'Instruction Publique*, LUCAS, the advocate, *l'inspecteur général des maisons de detention de France*, MOREAU *inspecteur des prisons*, PONCELET professor to the faculty of law at Paris, and BLONDEAU the dean of the faculty, together with many other physicians, mayors, commandants, counts, and deputies. (*Great applause.*)

TREATMENT OF CHOLERA,

BY INHALATION OF OXYGEN.

To the Editor of THE LANCET.

SIR,—Conversing with a friend upon that all-engrossing subject the cholera morbus, he suggested that the inhalation of nitrous oxide or other combinations of oxygen (from their actively-stimulating properties) might prove very efficient remedies in this dreadful malady.

After having attentively considered the subject and consulted one or two eminent medical friends, we coincided entirely with his opinions; and I have his permission to submit the subject to the consideration of my medical brethren, through the medium of your valuable paper, should you deem it worthy insertion. I will merely premise, as some claim to consideration for my opinion, that when a surgeon in his Majesty's navy, I witnessed the cholera raging with its utmost virulence in India itself; and when in practice in London, I had considerable experience in the beneficial effects of inhalation in cases of chlorosis, paralysis and other such diseases; therefore I am no stranger to pneumatic medicines.* It is self-evident, that the most active stimulants ought to be, on the instant, employed in an attack of cholera. In order to effect this, brandy, opium, peppermint, &c., have been administered. Now, in the then-defective state of the functions, it is not surprising that the largest doses of the above have proved ineffectual, while it is, most frequently, impossible even to keep them upon the stomach. After duly weighing all these things, it must strike every one, that inhalation is by far the quickest and surest means of introducing a stimulant, because from its exhibition into the lungs it is in-

* Some years since, when accompanying Count Rumford through the collieries, I had an opportunity of witnessing the completely successful effects of the exhibition of oxygen into the lungs in an extreme case. Some persons who were suffocated by carbonic acid gas in the pits, were brought to the surface. At the Count's suggestion, oxygen was injected into the lungs through the trachea, and immediate restoration of the vital energies ensued.

stantly conveyed throughout the whole system. I have classed nitrous oxide first, because it is so active a stimulant, and so very rarely followed by the depression consequent upon the exhibition of other stimulants. In plethoric habits, I am aware that this gas has been found to produce mischievous effects; but this state of things is scarcely to be apprehended in the complete prostration which attends cholera. Other combinations of oxygen might be instanced. As for external applications, ineffective as they may be in such extreme cases, yet if baths were used of hot oxygen, direct from the retort, they might also be found effective.

As a preventive, the best effects might be reasonably expected from inhalation, by preventing that depression which predisposes for contagion.

I am, Sir, your constant reader
and obedient servant,
J. H. Stein.

Manchester,
November 23, 1831.

TREATMENT OF THE

BLUE CHOLERA IN INDIA.

To the Editor of The Lancet.

Sir,—I have not personally witnessed the ravages of the Asiatic pestilence, but I have read more than enough to satisfy my mind that this highly-contagious disease has a much stronger claim to the name of plague, or typhus gravior, than to that of cholera morbus or malignant cholera; and that the dangerous symptoms which manifest themselves almost at the very threshold of the malady, arise from the extraordinary rush of blood upon the heart and lungs, by which the important functions of those organs are suspended or overturned; and hence immediately result the frightful loss of animal heat, the oppressed breathing, the suspension of pulse and of power, and the blueness of surface. These symptoms evidently arise from the blood ceasing to undergo the process of oxidation in the lungs, and by which beautiful decomposition, the body, in the healthy state, is uniformly preserving the natural temperature of 98 degrees by Fahrenheit's thermometer.

Theory would point out that free bleeding, the application of heat and stimulants to the surface of the body, and the exhibition of aromatic and exciting remedies internally, are the means best calculated to meet such a case; and practical theory amply sustains the correctness of the theory.

All the practitioners who have seen much of, and have written upon, this disease, agree upon one point; viz., the immense advantage of bleeding at the commencement of the disease. Indeed, the recovery or death of the patient seemed, in the opinion of some writers upon this disease, to depend upon the success or failure of the attempt to bleed. The oppressed condition of the heart and lungs (in most cases of this disease in its worst form), seemed to render the ordinary operation of bleeding impracticable; and for this reason, that the veins upon the surface contained no blood, while the heart and lungs (as the examination of the dead verifies) were gorged, and the former consequently incapable of exerting sufficient contractile energy to propel it into the veins. Bleeding, then, being considered in the early stage of the severe form of the disease, the remedy and the common mode frequently failing, I beg to suggest a method by which I have succeeded in cases of oppression, and wherein the veins would afford no blood. I beg to recommend that the radial artery should be resorted to upon failure in the veins. The communication between that vessel and the heart being direct, it offers a facility for unloading the chest, which no other mode of bleeding possesses; and the operation is one which may be safely undertaken by any surgeon who has an average share of anatomical knowledge, and its efficacy I have proved in my own practice.

I am, Sir,
Your obedient servant,
George Taylor, MD., M.R.C.S.

Kingston, Nov. 22nd, 1831.

A "CHEMICAL" DOCTOR.

The following prescription was written for a patient labouring under inflammation of the glottis, by a "Doctor" of Manchester, who professes to practise as a physician; but whether he obtained his medical degree at St. Andrew's or at Halifax, in Yorkshire, where he carried on the business of a common brewer before he commenced practising as a physician, is unknown to any of the faculty in Manchester.

℞ *Liq. ammon. acet.* ℥ij.
Ammon. subcarb. ʒiss.
Acid. tartar. ʒij.
Sp. ether. nitr. ʒss.
Mist. camphor. ℥iij. M.
Capt. coch. ampl. 4tis horis.

[The original recipe is before us.—Ed. L.]

PROPOSAL OF A NEW METHOD OF TREATING

THE BLUE EPIDEMIC CHOLERA

BY THE INJECTION OF HIGHLY-OXYGENISED SALTS INTO THE VENOUS SYSTEM.

Read before the Westminster Medical Society, Saturday, Dec. 3rd.

By W. B. O'Shaughnessy, M.D.

It is with feelings of no ordinary hesitation that I venture to solicit the patient consideration of the Westminster Medical Society, while I lay before them in the briefest terms I can employ, an outline of some suggestions regarding the treatment of the Indian cholera. I say that it is not without much hesitation that I do so, because on every previous occasion on which I offered any contribution to this Society, or to the general profession through the medium of the medical press, the subjects I treated of were of that obviously experimental kind that I scarcely dreaded contradiction in the inferences I deduced or the arguments I brought forward. In the present instance, it is true, that the foundation of the subsequent observations is also strictly experimental and demonstrable in its nature. Nevertheless the conclusions I may draw are, I feel, rather more calculated to admit of discussion than was the case with any of the previous topics to which I have invited your notice.

From all the statements and histories yet published on the *treatment* of the cholera, it is evident that notwithstanding the numerous therapeutic methods hitherto prescribed, the disease still retains so much of its appalling virulence that under certain hygeienic imperfections, in peculiar states of crowded populations, of public moral depression, &c., it sometimes bursts forth with such extraordinary fury that medical aid, however instant, fails in arresting its deadly progress. Of the truth of this assertion sufficient evidence is borne by the history of the Warsaw epidemic, during which eventful period, when the loss of the battle of Ostrolenka threatened the Poles with the immediate fall of their capital, the pestilence assumed so frightful a pitch of violence that we learn from MM. Foy, Brierre de Boismont, and others, that medical assistance, however speedy, however skilful, fell powerless beneath the onset of the disease. Yet in Warsaw there was a combination of the most talented, experienced, and devoted men whom medicine ever furnished to the succour of mankind.

Again, to approach nearer home, we find that in Sunderland the mortality in the cases once termed "*malignant*" is still so great that the experience of the past seems almost valueless for present or future protection. That medicine, as at present administered, prevails in many cases, I do not deny, but that on the other hand cases still occur so violent as to defy its powers is equally manifest. Hence, doubtless, has it arisen that up to the moment in which I address you, the most *practical* men in our profession are occupying themselves assiduously in the search for some more specific remedy than has yet been discovered. I need, indeed, no stronger proof of the legitimacy of these efforts than to point out the distinguished, and above all, *experienced* individuals engaged in their prosecution.

The habits of practical chemistry which I have occasionally pursued, naturally led me, as well as others, to inquire whether in the remote causes, the pathology or physiology of this disease, any data could be discovered which might lead to the application of chemistry to its cure.

Looking to the *remote* causes of cholera, it was quickly evident that though admitted by the majority of deliberate writers on the disease, to be *a poison* (an idea in which I fully coincide), yet so utterly unknown is the chemical nature of this agent, so ignorant are we even of its physical characters (some terming it "animal," some "vegetable," some "aërial" or "terrestrial," and others even endowing it with life); in such utter darkness, I repeat, are we regarding its true constitution, that to attempt to supply an antidote *on the recognised chemical* principles which toxicologists have determined, could possibly be attended with no beneficial or even encouraging results.

Looking then to the stages in the malady consecutive on the operation of the remote cause, what are the cognisable circumstances which may rationally fix our consideration? What, in other words, are the physical changes, if any—what the chemical alterations, if such there be, which the operation of this cause has effected, either in the fluids of the human organisation, or in the solid vessels, &c., in which these fluids are contained?

To answer this question correctly, we must be cautious to take the disease into consideration only in its abstract, *essential* forms, divesting it of all *accidental* phenomena of symptoms and pathology, &c. In the case, then, of abstract cholera, in the "cholera foudroyant" of the French writers from Warsaw, what are the first effects of the remote cause?

The all-but-unanimous evidence of those who have witnessed the disease in this its most appalling, though its simplest shape,

teaches us that universal stagnation of the venous system, and rapid cessation of the arterialisation of the blood, are the earliest, as well as the most characteristic effects. Hence the skin becomes blue—hence animal heat is no longer generated—hence the secretions are suspended; the *arteries* contain black blood, no carbonic acid is evolved from the lungs, and the returned air of expiration is as cold as when it enters these organs. Such are the primitive effects of the remote cause, and these again constitute the causes of a third set of phenomena, to which it is unnecessary for me to advert on this occasion.

The questions then naturally suggest themselves, Will the alteration of this black and thickened condition of the blood to the state of arterialisation, prevent the sequelæ of exhaustion, impeded secretion, &c., by which the fatal event is induced? and, secondly, What is the best mode by which this artificial arterialisation can be effected, if we admit the probable benefits of the change?

In commenting on the first question, we must at once admit, that in all diseases it would be desirable to counteract the remote cause, if that were possible, according to rational principles, or had experience, no matter though empiric, lent encouragement to the attempt. Experience, however, having fully shown its frequent impracticability in the present instance, we may, I believe, without discussion, confess the justice of attacking the effects. Such a proceeding, moreover, is not without precedent in the treatment of several other affections, in which the produced effect reacts upon, and favours the fatal influence of the primary cause.

So generally acknowledged is this principle in the present case, that in the treatment of the disease now before us, we find a great majority of practitioners earnestly recommending *venesection*, not as a sedative, not as an antiphlogistic, not as a blind empirical specific, but as a means of diminishing the venous congestion, of thus restoring the suspended circulation, and of again recovering the arterial qualities of the blood of which a bright scarlet hue is an outward and visible sign. Such are the principles of Dr. Johnson; such of Mr. Bell, one of the most philosophical writers who has discussed this subject; such are the views of the eminently experienced Annesley, such of Dr. Kennedy, the practical part of whose volume must at least receive our warm approbation; such, in short, are the opinions of a vast majority, if not of all of the writers who have *reasoned* on the essential phenomena of this affection.

Again, another class of physicians embracing the same views, propose by different means to attain the desired object, and in order to remedy the absence of arterialisation, they recommend the inhalation of oxygen gas, or of a mixture of oxygen and atmospheric air, or of the protoxide of azote, that singular aërial compound, to which the name of the "laughing gas" has been applied.

Now it might rationally be imagined, that the success or failure of these methods should afford us a touchstone of some authority, in deciding on the rationality of the principles on which they are practised; and accordingly we find it established by numerical returns of the most convincing kind, that the depletion of blood, whenever *practicable*, whenever performed in *sufficient time*, and when not contravened by peculiar circumstances, of idiosyncracy, particular debility, &c., has effectually removed the effect, and remedied the operation, of the remote cause; in other terms, has cured the disease.

Before proceeding any further, therefore, it is necessary to examine briefly into the causes which interfere with the universality of this remedy; and these I apprehend may be found to reside *in the debilitating influence*, whether transient or permanent, which the detraction of blood sometimes occasions, and which, when added to the debilitating effects of the remote cause, becomes sufficient to overwhelm irremediably whatever vital power still clings to the system. Again, for strictly mechanical reasons, blood may not be procurable; and when we consider that the forces which the venous circulation obeys, are almost completely suspended in the violent cholera, it can scarcely be a matter of surprise that detraction of blood by venesection should frequently be found an impossible operation.

That the inhalation of oxygen gas has failed remarkably in achieving the desired end, is unhappily too notorious. To those however who examine closely into the cause of the failure, the want of success will not be found in the least degree to invalidate the principle that rearterialisation of the blood should tend powerfully to the cure of the disease. Many causes, indeed, conspire to prevent effectually the entrance of the gas into the circulation. The lungs in numerous cases, as proved by the dissections in Warsaw, are thickly invested with the same pultaceous matter which is of familiar occurrence in the intestines; again, the suspended motion of the heart permits but an insignificant stratum of blood to be exposed to the aërial medication, even though the mucous membrane was free from this peculiar excretion.

Admitting then, according to the practice of the venesectionists, that the detraction

of blood is successful under favourable circumstances, by obviating the primitive effects of the remote cause—viz. by re-exciting the current of the blood, and, consequently, permitting new strata of that fluid to be acted upon by the inspired air—admitting this, and further recollecting the manifest causes which occasionally preclude the success of this mode of arterialising the blood, let us next inquire whether there does not exist some certain method of inducing this apparent arterialisation, and that free from the incidental objections to which venesection and gaseous medication are liable. That such a method can be followed, I trust I shall be able to render probable.

It is previously necessary to understand what authority there is for assuming that arterialisation is a chemical process, and that it is legitimate for us to derive therapeutic conclusions from experiments on blood apart from the living body. On this point I deem it unnecessary to dwell any further than by quoting the opinions of Dr. Christison, whose distinguished reputation as an accurate chemist, a *rational* physiologist, and an able practitioner, entitles him to our most unlimited confidence. I quote from his excellent paper on "the mutual action of blood and air," published in the *Edinburgh Medical and Surgical Journal*, and as I have mislaid the number of that journal, I am obliged to re-translate his expressions from the version which appears in the *Archives Générales de Médecine* for October of the present year.

"It is then thus clearly proved that when venous blood assumes the scarlet colour of arterial blood by agitation with atmospheric air, that a considerable proportion of the oxygen of this air disappears. *Carbonic acid is formed*, a much larger quantity of which would be found on analysis, did not the serum possess the property of absorbing a large quantity of this gas. Thus all the essential phenomena of the arterialisation of the blood in the lungs *during life*, at least as regards the change of colour of the liquid *and the alteration of the air*, take place equally in the blood out of the vessels, and consequently these phenomena are *independent of vital action*."

Arterialisation and oxygenation being then used as synonymous terms (and did time or space permit, I could adduce ample additional proofs of their identity), is the oxygenation of the blood *only* to be effected by the decomposition of oxygenated *gases*? The supposition would be absurd, and we have the arguments of the most unbounded though precise analogy, and of actual experimental facts, to convince us, that highly oxygenised *solids* or *fluids* can work the same effect; that as nitrates and chlorates (salts at the maximum of oxidation) can oxygenise the metals and other simple substances with which they are brought in contact, so can these salts, and many others of similar constitution, enter upon the same play of affinity with the blood that occurs between it and the atmospheric air. Oxygenation of the blood, or arterialisation, may, I repeat, be accomplished by other oxydising agents besides those of the gaseous class. Time does not permit me to narrate the experimental proof of this position, but I am for the present perfectly satisfied to maintain its validity by a reference to the well-known laws of oxygenation in the several departments of inorganic and *organic* matter.

It seems to me, then, that, if we could bring certain salts of a highly oxygenated constitution fairly into contact with the black blood of cholera, we would certainly restore its arterial properties, and most probably terminate the bad symptoms of the case. It is however obvious, that in a disease so electric-like in its rapidity, and one moreover in which circulation is almost suspended, and the intestines generally covered with a thick pultaceous paste, it would be a vain expectation were we to imagine that, as in the more protracted yellow fever of *Santa Cruz*, alluded to by Dr. Stevens, time would permit of the absorption of the saline oxygenating materials from the alimentary canal. I therefore conceived the idea of injecting into the veins such substances as an examination of the blood in cases of cholera would show to be most capable of restoring it to the arterial qualities. Before so novel, and apparently startling, a practice as the injection of such remedies into the veins of the human subject could be prudently put into execution, it is necessary to have distinct notions of the effects of the individual salts on the blood without the body, and also while still circulating in the living frame.

Of the salts which contain the greatest quantity of oxygen, and possess most powerfully the action of oxidizing venous blood, may be mentioned the nitrate and chlorate of potash. A very few grains of either of these salts are amply sufficient for effecting this change in a larger quantity of blood than the pulmonic circulation usually contains. Again, we know by clinical experience of the most extensive kind, that nitrate of potash and chlorate of potash enter the circulation from the stomach and alimentary canal, and pass off in the urine, wherein they may be detected without offering any injury to the organisation of the blood through which they passed. From these two facts, it is evident that the injection of the nitrate of potash or chlorate of potash

at the veins could possibly do no mischief, and might effect much good, when carried into effect with the precautions to be presently pointed out. In corroboration of the probable efficacy of this mode of treatment, I will briefly allude to two experiments which, in the prosecution of some toxicological inquiries, I availed myself of the opportunity to perform, about three months after Dr. Stevens's researches and experience were laid before the profession.

In one series of experiments, a healthy large-sized mongrel dog had, on different occasions, from ten to sixty grains of the chlorate of potash, dissolved in three ounces of tepid water, injected into one of his cervical veins. He seemed to experience no ill effect; the pulse rose in fulness and frequency; he passed urine copiously in a short time, and the urine, when concentrated, gave incontrovertible signs of its containing the chlorate. Blood drawn from the brachial vein had a fine scarlet colour.

In another series of experiments performed on the same animal, he was brought into a state of poisoned asphyxia by the insufflation of prussic acid vapour, or sulphuretted hydrogen gas. While stupified, indeed apparently dead, from the former, the brachial vein was opened and a few drops of excessively dark blood could with difficulty be procured. Half a drachm of the chlorate of potash dissolved in water of the temperature of the blood was injected slowly into the jugular vein; the pulsation of the heart almost immediately began to return, and in the course of eight minutes, scarlet blood issued from the divided brachial vein. In twenty minutes the animal was nearly recovered and passed urine copiously, the secretion affording the usual evidence of its containing the injected salt.

I trust I may not be mistaken, so far as to suppose that I regard the preceding experiments as proofs that the practice of injecting the veins would prove equally successful in the blue cholera of man. The widest inference I wish to derive from them is the evidence they seem to afford, that no disorganization of the blood is thus produced, that the blood in the living animal is thus restored to the arterial tint which the poisonous agents had destroyed, and that the processes of respiration and circulation were thereupon immediately resumed.

On the whole, I conceive that the preceding facts are amply sufficient to warrant us in trying this new method, unless some strong objection be made to its peculiar nature.

The practice of injecting the veins in desperate cases with substances of still more energetic properties than those which the chlorate of potash possesses, is by no means new to medicine. In an extensive and brilliant series of experiments performed on horses at the veterinary school of Alfort, Dupuy demonstrated the extraordinary success attendant on this practice, and the safety with which carbonate of ammonia and many other substances could be injected into the venous system. Again, the records of toxicology afford us examples by no means unique, of the successful injection of tartar emetic into the blood in cases of hopeless narcotic poisoning. In the Journal des Progrés, vol. 3, 1830, MM. Percy and Laurent relate the cases of three Russian soldiers cured of tetanus by injections of opium into the veins. In the same journal, the same writers also mention other cases of tetanus successfully treated by the injection of a decoction of twenty-four grains of the datura stramonium in half an ounce of water.

I trust I have now said enough to induce and justify the trial of this new proposal, at least *in the fearful cases in which venesection is found impossible, and the violence of the malady derides all other means of medication*. Should the method be found to succeed, it will have the advantage of fulfilling all the objects which Messrs. Bell, Kennedy, and Annesley, hold in view when they practise venesection, and that without threatening to induce the debility which the detraction of blood is thought by many to endanger.

In the performance of the operation, the circumstances of the disease must be borne in recollection. When the current of the circulation is impeded, as in the blue cholera, injection from the bend of the elbow can scarcely be efficient. I would, therefore, suggest that the tube, which should be of gold or ivory, be introduced into the external jugular vein immediately as it crosses the sterno-mastoid muscle. I would select this place as the nearest spot to the superior *cava*, free from the danger of the entrance of air caused by the suction force of the right side of the heart, an influence which Berard has shown to be ineffective in the introduction of air, except where the flaccid orifices of a divided vein are kept gaping and stretched by adhesions to adjacent prolongations of fascia or condensed cellular substance; as is remarkably the case with the subclavian and with the jugular in the lower third of its progress. The syringe used in the injection should contain no more than three ounces, the solvent should be distilled water heated to a blood warmth, and the syringe also equally warmed. The tube should not be more than an inch long, and curved gently for the convenience of manipulation, and it should have a marked conical form. In performing the operation, after the vein is exposed,

I would make a puncture with a lancet, just sufficient to permit the introduction of the tube, but I would by no means detach the vessel from its connexions. The injection should be deliberately and slowly performed. From ten to thirty grains of the chlorate might, I think, be safely employed. *It would, however, be essentially necessary that before the experiment was tried, a minute analysis of cholera blood should be performed,* and the effects of the oxygenated salts examined, as to the change of colour and their influence on the affinity of that blood for oxygen in its uncombined or its nascent forms. To my mind no satisfactory analysis of the blood in cholera has yet been completed. HERMAN'S, the most recent and most minute, is still, I am prepared to prove, far from deserving implicit confidence.*

To restate then, briefly, the suggestions advanced in the preceding observations, I propose to effect by the injection of powerful oxygenating salts, directly into the veins, that change to the arterial state, which Mr. Bell and others attempt by venesection, an operation which, though fraught with the utmost utility in many cases, is in others palpably inadmissible even on the testimony of its warmest and ablest supporters; and in all other cases, when performed after a certain lapse of time, is asserted by some high authorities to be hopeless if not dangerous in the extreme.

2nd. This mode, by injection, I have shown, by the experiments which I myself performed, to be free from the imputation of its being unsupported by analogous facts. I have also shown that in other diseases of imminent peril, venous injection has been boldly and successfully practised with substances, themselves even possessed of virulent energies.

3d. The substances I recommend to be employed are proved by numerous experiments to exert no coagulating, corrosive, or solvent agency on the blood, they passing through the circulation freely in healthy animals and in man.

4th. *I have limited the proposal on its first employment to those awful cases in which all other systems of medication are shown to be inert.*

In conclusion, then, I trust I may be permitted to express my hope, that in appearing before you for once in a speculative character, I have not been guilty of wasting your time with utterly profitless speculations. Were I willing to trespass on it more fully I could derive many additional arguments from the recent admirable analyses of healthy blood performed by Lecanu of Paris, and which prove the errors of M. Herman's experiments; from the consideration of the theories of Herschel and Prout regarding the agency of minute quantities of saline matter in the blood; from the investigations lately published by my eminent friend Dr. Christison, on the mutual action of blood and air; from the researches of Faust and Togno and Mitchell of Philadelphia, and of Graham of Glasgow, on the endosmose and exosmose of gases, and the influence of this extraordinary action on the oxygenation of the blood; from the clinical researches of Reid Clanny of Sunderland, of Cooke of Kentucky, and others. I did intend to draw collateral support from a reference to Dr. Stevens's researches in Santa Cruz; that author, however, being, as I have been since informed, on the eve of publishing full and detailed accounts of his inquiries, I have deemed it imprudent to press his investigations into the present paper. Lastly, I think it right to say that I have designedly avoided any comment on the physiological treatment of the remote cause of the disease.

Before I conclude, I have further to request your attention to the circumstance of a similar recommendation to that I now venture to propose, being published this day in a weekly medical journal,* nearly in the words I uttered last Saturday evening when giving notice of my intention to propose the injection of saline substances into the veins. If the treatment of a disease so afflicting as that which we are now discussing were a legitimate theme for the indulgence of any expressions of disappointment or irritation, I might be apparently justified in complaining of this circumstance. I might appeal to the gentleman who presided on the last evening—to the secretaries—to the meeting itself, whether I did not distinctly make the proposition. I might appeal to Dr. Johnson, who has received a written communication from me on the subject on Tuesday last. I might even appeal to the reporter of the

* Herman mentions *free acetic* acid as an ingredient in healthy blood. He also states that after coagulation of the cholera blood, the crassamentum was *acid* and the serum *alkaline*! It is unnecessary to dwell on the latter statement, as it involves an impossibility. Concerning the first, it is sufficient to observe that in the best analysis of the blood ever performed—viz. that by M. Lecanu of Paris, and for which he obtained the gold medal from the Academy (vide *Journal de Pharmacie, September* and *October*, 1831), no statement occurs of the detection of acetic acid, though, had it been present, M. Lecanu's process must have revealed its existence.

* The name of the journal was mentioned by Dr. O'SHAUGHNESSY.—REP.

journal in question itself; and, lastly, I might call upon a gentleman to whom, on Saturday evening last, I read the notes of my brief paper. But, Sir, I forego all these feelings, for, on reflection, I think it is extremely unlikely that any member of our profession could be wilfully guilty of the baseness of thus embezzling the ideas and suggestions of another, however valuable or valueless these suggestions might be. I am, therefore, rather inclined to express my great pleasure, that the principle of this proposition should receive support from so respectable a quarter. There is, however, thus much difference between us. The medical journal recommends the injection of common salt, the *chloride* of *sodium*. I, on the other hand, advise that of the nitrate or chlorate of potassa. I would venture to remind the editor that *chloride* of *sodium*, though it does redden venous blood, cannot possibly oxygenate it, as *it contains no oxygen itself*. There are, indeed, many substances capable of reddening blood, which cannot arterialise or oxygenate it. Hydrogen gas, for example, is stated by Dr. Davy to possess this quality. I believe it will, therefore, be conceded, that as far as theory is concerned, the salts I mention are likely to ensure more satisfactory therapeutic results than that which the writer in question has proposed.

LONDON MEDICAL SOCIETY.

December 5, 1831.

Dr. Burne, President, in the Chair.

THE CHOLERA.

The subject of the blue epidemic cholera has obtained its share of attention here, as well as at the Westminster, although this Society has not had the advantage of numerous newspaper paragraphs to secure for its late meetings the "overflowing audiences" of the other institution. Indeed, at this elder and more sedate association, the members would be "frighted from their propriety" by the sieges of two or three hundred visitors which have added to the *eclat* of the more westernly society.

On the present occasion one of the "cholera lions" (Mr. Searle will pardon the term*) attended and admixed a share of personal experience with the speculations which necessarily occupy the debates in London. The excitement amongst medical men in London on this subject is very great, and certainly the decimating pestilence will not arrive so far south without meeting with abundance of combatants who have held due preparative discourse respecting it and its horrors.

With a view to reduce points of discussion into as small a compass as possible, the President, on introducing the subject of *the cholera*, divided the text into four heads of discourse, to which he requested all observations might be confined. 1. Its history. 2. Instances in which it could be proved to have been communicated by contagion, whether from personal contact with the affected, or the handling of garments; and whether any party present would feel it as safe to sleep in the wards of a hospital filled with cholera patients, as in a hospital filled with cases of rheumatism or ague. 3. The symptoms of the various stages and their morbid appearances. 4. The treatment of the various stages.

Mr. Searle presented himself to the meeting, and, directing his remarks to the second head, stated that he believed, on the following grounds, that the epidemic cholera was not necessarily contagious. He had had from thirty to fifty patients at a time under his care in a hospital at Warsaw, during two months of which period, not a single case of cholera had occurred in any of the attendants, who had eight or ten of them of a night by turns slept in the unoccupied beds which were mingled promiscuously amongst the sick. These people were always attending the patients, putting bed-pans into their cots, assisting in the dissecting-room, sewing up the dead bodies, which were very numerous, and burying the dead. Throughout his (Mr. Searle's) entire period of residence, only one man attached to the hospital was attacked, and he had nothing more to do with the patients than to assist the apothecary in compounding the medicines. This man had been intoxicated for several days, received a severe beating for it, was afterwards confined two nights in a damp building, where it was said he had his shirt taken from his back, took the cholera, and died. He (Mr. Searle) had himself constantly resided, and slept, in wards in India where there were above a hundred patients whom it was impossible to leave for an hour, and yet, during fourteen years of intercourse with the disease, he had never known a case of what he could consider decided contagion. He certainly imagined, however, it might become contagious under a particular combination of circumstances. Yet every thing he saw discountenanced the opinion that it was *propagated* by contagion. In Warsaw there were ten professional gentlemen sent thither by the French government, who constantly visited the hospitals, witnessed the *post-mortem* examinations,

* A Sunderland practitioner might gain a large sum by showing himself in town just now, at half-a-crown a head.

inoculated themselves from the patients, and each of these gentlemen declared that the cholera was not contagious. Yet were he required to reason and decide on all the evidence adduced by others to prove its contagiousness, he should feel bound to say that *it was contagious*. If, for instance, he were to take the last Number of the *Westminster Review*, he must say that it contained a body of evidence in proof of the contagiousness of the cholera which could leave no doubt on the mind of any one that it was contagious. Still his own experience did not lead him to such a conclusion.

Dr. Shearman. But if the cholera be not contagious, how did the 30 to 50 patients in the Hospital at Warsaw catch the disease; and why did not the whole population take it?

Mr. Dendy. Was the identity of the Polish and the Asiatic cholera fully established?

Mr. Searle. Fully. It was the same disease in Warsaw as in India, and the cases which he had seen at Sunderland left no doubt on his own mind that the cholera there was the Asiatic cholera, simply modified by climate and the European constitution. The chief difference was, that the fever which in India succeeded the first attack, was simply inflammatory, while in Europe it was more the fever of irritation,—typhus fever, combined generally with acute inflammation of some particular part.

The President. How many medical men have fallen a sacrifice to the cholera in Poland?

Mr. Searle said there were 80 medical men in Warsaw, and of these he knew of only one who had died from it. That was an Englishman who had previously been the subject of intermittent fever, a month after which he had the cholera and died. In reply to Dr. Shearman he should say, that the original cause of the cholera was *malaria*; the patients were generally persons residing on the banks of the Vistula, and in localities of that description. Whether the damp atmosphere was only a predisposing cause, or the efficient cause itself, he could not tell, but he thought it was *the efficient* cause,—that it was the vehicle of a poison which was received into the lungs and contaminated the blood, and that its primary operation was specifically upon the capillary vessels, and thus peculiarly affected life, as any influence which arrested or depreciated their functions must occasion debility of the whole frame, and immediately affect the functions of the brain and heart, occasioning a sense of distension about the præcordia,—a symptom which always preceded the symptomatic evacuations of cholera.

Mr. Greville Jones thought the cholera was at once epidemic and contagious, because there were so many disciples of each doctrine. Mr. Searle's evidence was conclusive that at Warsaw it was not contagious, while the evidence from Sunderland went to show positively that in that town it was contagious. To Mr. J., however, the existence of a species of cholera in England of the same character as that of India was not new. He had stated, as long back as June last, that the cholera was then prevailing in this country. It commenced with an influenza, was then spasmodic, and then exhibited the languid circulation, and general coldness and blueness of the body. There was vomiting in every case. In only one of the instances, however, which had, in May, June, and July, last, occurred to him, was there the characteristic coldness of the tongue. None of the patients died in the first stage. One of these, a man, named Storer, was treated at the onset with calomel and opium, and he got over that stage, but he was soon attacked with a grave sort of typhus fever and died suddenly. On examination, no particular disease was found, or inflammation of any organ, but all the vessels were very full of black blood. He thought that a great atmospheric change had been prevailing over England for some time, and was the cause of the cholera here.

Dr. Shearman. What are the particular circumstances at Sunderland which have given rise to the cholera there; and why, if merely epidemic, does not the same cause operate in other places on the eastern coast of England?

Dr. Uwins agreed with Mr. Jones. He had cases with almost all the symptoms of the Indian cholera.

Mr. Stephens thought it both epidemic and contagious. As a proof that it certainly was epidemic, he instanced a case related to him by a friend, who sailed in an East India Company's ship from a healthy port in India, all well on board, for Bengal. They communicated with no ship or boat on the passage, but touched at Madras, where some of the officers only, and no men, went on shore. At this presidency every one was perfectly healthy. They sailed on to Bengal, but before they got there the cholera had attacked the crew, and out of 200 men there were not enough well to moor the ship, while not one of the officers became ill. At Bengal they found the disease already raging.

Dr. Walshman said, that thirty years ago, he remembered that "the same kind of disease prevailed in this country as is raging now, and it was then thought to be contagious." Cucumbers, plums, and other fruit, appeared to be exciting causes. Where he had been called in to the cases at

first, he lost not one, but where he was consulted in the latter stages, the patients departed this life. Vomiting, spasms, and blueness, were the prevailing characteristics then, as now. His treatment was "dilution" of the contents of the stomach.

Dr. STEWART thought there had long been many approaches to the Indian cholera in this country, and that almost the only difference between the two diseases was the *fatality* of the present epidemic.

Mr. PROCTOR considered the malaria of damp situations ought not to be considered the cause of the cholera in Poland, or elsewhere, because the disease had raged in places so high as not to be liable to the operations of malaria.

Dr. STEWART here announced that there was to be a meeting of anatomical teachers at the Freemason's Tavern, at half-past nine o'clock that night, and accordingly, after

Mr. GOSSETT had submitted to the meeting a draft of a petition to the legislature, expressive of the disgust and horror felt by the members of the Society at the atrocities of the miscreants *Bishop* and *Williams*, and their readiness to assist government in any way to stop the practice of "Burking," or suggest efficient measures for regulating dissection,

The meeting broke up. The subject of cholera to be renewed next Monday.

[We subsequently attended the meeting announced by Dr. Stewart, but on the assurance of the convener that it was to be regarded as a private meeting, we give no report of what passed. We may add, however, that an account of it, which appeared next day in the *Morning Herald*, did not contain one correct statement relative to the proceedings.—REP.]

THE LANCET.

London, Saturday, December 10, 1831.

WHEN the crimes, perpetrated by the atrocious *Burk* were first announced to the public, it was believed that they stood alone in the long, black, catalogue of human infamies. At that time, it is true, such monstrous deeds may have been without their parallels, but subsequent events have shown that *Burk* was only one of a numerous family, who are supported in their villanous acts, (we will not say with a thorough knowledge of their crimes,) by men who, however respectable they may be in their station in society, are scarcely less culpable in their conduct than the convicted murderers, the recital of whose atrocities has filled the public mind with horror, and chilled the current of life in the hearts of all the benevolent and conscientious portions of mankind. Need we repeat in this place what has been the course pursued by THE LANCET upon the question of human dissections? Surely not; for all the world knows how vehemently we have raised our voice against the monopoly which was instituted and encouraged by the College of Surgeons, and against the "Anatomy Bill" of Mr. WARBURTON, which, had it been passed into an act, would have only added another lever to that machine which the College has so long exercised, to the scandal of the profession, and to the detriment of the public.

Without, however, going fully into this question at the present moment, it is our duty to place in the columns of this Journal the most prominent of the facts connected with the recent disclosures, for THE LANCET will be found in medical and other libraries, when the tricking and time-serving newspapers shall have passed away, and been forgotten for ever—when the records, which they now send forth to emblazon a tale of sorrow, and to raise their circulation, shall be only appealed to as the evidences of *their* guilt in THEIR department of crime, and as indications of the black traits of character which may co-exist in the mind of man, with abilities of the highest order.

What then are the facts? Why, it appears that three men, named *Bishop*, *Williams*, and *May*, applied, a few weeks since, to the dissecting-room porter of the new College—that is, King's College, in the Strand, for the purpose of disposing of the dead body of a youth aged about fourteen years. Circumstances of a pressing and prominent character having excited the suspicions of the demonstrator and porter,

information was conveyed to the police establishment, and the persons who offered the body for sale were immediately taken into custody. A coroner's inquest—a *non*-medical coroner's inquest—was held, and after an inquiry of two or three days' duration, a verdict was returned that the poor boy "was murdered by some person or persons unknown." Mr. THOMAS, however, the inspector of police, was somewhat more shrewd than the coroner and his jury, and justly concluded that, if *Bishop* and his partners could give no satisfactory account as to the mode in which they became possessed of the body, they ought, in law and justice, to be themselves considered the murderers, and to suffer as such. Accordingly, he took care that they should be held in custody, and at an examination entered into subsequently at Bow Street, it was too clearly proved that the *sellers* of the body were the murderers of the poor boy. After many careful and protracted inquiries, *Bishop*, *Williams*, and *May*, were committed to Newgate for trial, where, having been arraigned at the criminal's bar, they underwent the searching ordeal. The evidence was conclusive; they were convicted by a discriminating jury, sentenced to be hanged, and *Bishop* and *Williams*, who afterwards *confessed* to the actual commission of *three* murders, were executed on Monday morning last, and their bodies handed over to *dissection*, in conformity with the direction of the judge, and the decrees of the statute-law of the realm.

Such are the facts; but what are the inferences? Why, that blinded by prejudice, or a still worse feeling, our anatomists can have exercised no prudential scrutiny in admitting dead bodies into their dissecting rooms, and that the members of our legislature are so hardened in their hearts that they are insensible to the pangs which the crimes of *Burk* and his coadjutors in infamy are calculated to produce upon the feelings of the great mass of mankind. When the Anatomy Bill of Mr. WARBURTON was read a second time in the House of Commons, it had obtained the support of about thirty members of that body, but it was rejected in the Lords, and very properly; because it left untouched the root of that evil which it professed to be desirous of destroying. The bill gave additional power to the College of Surgeons! Good God! To that College, out of whose *monopolizing* measures sprang the whole race of "Burkers!" But the public are, at last, really alarmed; government stands in a state of trepidation; the members of the medical profession are perplexed, and the anatomists, the professional and the trading dissectors, stand self-condemned, if not self-confessed, as accessories before and after the fact.

Under these circumstances it is admitted, on all sides, that "something must be done"—that the law must be altered—that "the schools must be protected," and that "the public health must not be neglected." It is proposed that dissections should be discontinued; the lecturers are holding meetings, and parliament is once more to be appealed to.

When this subject was brought before the houses of the legislature on a former occasion, we took the liberty of enforcing, in terms as strong as could be consistently placed in print, that the repugnance to dissections would never be removed from the minds of the mass of the people, until the statute was repealed, which consigned the bodies of murderers to the dissecting knife, as the last mark of punishment and degradation which it was in the power of the law to inflict. Furthermore, we boldly threw out the proposition, that the temptation to "*burking*" would never be removed until the *purchasing* of the dead bodies of human beings should be made an offence, calling for the severest penalties of the law. In these views we were opposed by the opinions of men of great influence

and exalted character. It was contended that the fear of dissection would prevent the commission of murder, and that the schools of anatomy would not be supplied, if the dead bodies of human beings could not be purchased—from human butchers, we presume!

Without, at present, inquiring into the full extent of the influence which our statements may, from time to time, have produced upon the determinations of the legislature, it is enough for us to be enabled to state, that our petition, presented to the House of Lords, led to the rejection of the "Anatomy Bill,"—a bill which proposed to "*legalise*" the SALE of the bodies of human beings, and thereby held out, in our opinion, a temptation to the commission of those crimes which we know its benevolent promoters sincerely designed to prevent.

But disregarding the strong bearings of the question, or altogether overlooking those inducements which, as it were, create the motives of evilly-disposed men, it was unhesitatingly alleged, that the fear of hanging would prevent "burking" *to any extent*, that the fear of dissection would prevent ordinary murders, and therefore, although it was desirable that the schools should be supplied with subjects for the benefit of science, it was highly expedient that the forms of the law should remain unchanged for the benefit of the people at large. The *Old Times*—that weathercock and unprincipled print—that "burking," or anti-"burking," print, as circumstances may suit—that flagrantly falsifying and tergiversating journal, applauded the masculine mind of Earl GREY, when the noble Earl propounded the sagacious doctrine, that murder could not be by any measure so effectually prevented, as by consigning the bodies of murderers to *dissection!* True Earl GREY was not in office at the time of this eulogy, but he happened to side with the men in office, and *therefore* the *Old Times* sided with *him*. Should Earl GREY embrace a different doctrine now, so would the *Old Times*. But the conduct of that Journal is of little importance. We must look to the opinions of the Premier, because the bearing of those opinions will resolve the question of protection or *non*-protection to the public. Now how it can rationally be contended that a creature who could deliberately determine to plunge his knife into the heart of an unoffending being, for the bare unmixed purpose of disposing of that fellow-creature's body for so many pounds, shillings, and pence, stands the least chance of being deterred from the commission of the crime, by the reflection that a knife may possibly be plunged into his own heart after his body be *dead*, we are utterly, profoundly at a loss to determine. But it is useless to argue upon such an absurd, such a radically ridiculous proposition. The *facts* knock down our opponents at once. Murders are committed weekly in this metropolis, the murderers being instigated too by no other motive than the pecuniary profit arising from the perpetration of the deed. This is enough; as it shows most clearly that neither the halter nor the knife has any terrors for those brutes in human shape, who have resolved upon slaughtering their fellow-creatures when stimulated by the hope of a proffered receipt.

This point, then, is settled; but what is now to be done? We enjoin medical practitioners in every part of the kingdom, to use their influence in inducing the public to petition the parliament for two things:—*First*, for the abolition of that useless and pernicious penal statute which consigns the bodies of murderers to dissection; and, *Secondly*, for the enactment of a law to render the BUYING or SELLING of a dead human body an offence subjecting the convicted party to transportation for life.

These objects once obtained, our schools would no longer be destitute of a proper

supply of subjects—obtained without offending the feelings of a single individual; and the public would be freed from that blood-thirsty, infernal race, so truly typified by the deeds of the *Burks*, the *Bishops*, and the *Williamses*.

We shall resume the question.

Afflicting as is the pestilence which is now raging in the North of England, we are threatened with plagues in this metropolis likely to be still more destructive. We are given to understand that regular medical practitioners are even advertising their "specifics" for the cholera!

Now we take the earliest opportunities of cautioning the public against such murderous frauds. There is no *specific*;—there is no *remedy*; and, if there were, what must be thought of the conduct of that man, who, for the sake of a few paltry pounds, could persist in keeping the secret in his own possession? We ask, is such a being to be trusted? Are the pretensions of a brute to be recognised, who could coolly allege that he would not protect people from suffocation or drowning, unless rewarded for his exertions at a certain charge of half-a-crown or five shillings a head?

If the public suffer themselves to be deluded by the preposterous pretensions of knavish quacks, the poison of "*specifics*" will produce far greater devastation than the poison of all the *choleras* in the world.

THE CHOLERA AT SUNDERLAND.

The following is a tabular summary of the *Daily Reports* made since our last, up to the 6th instant.

On the 28th of November, there remained under treatment 32 cases.

	New Cases.	Deaths.	Recoveries.
Nov. 29th	12	7	5
30th	13	4	3
Dec. 1st	8	5	3
2nd	17	1	10
3rd	7	6	4
4th	5	2	6
5th	5	2	6
6th	....	6	4

From the commencement of the disease, on the 26th October, there have been, Cases 369, Deaths 119, Recoveries 219. Remaining under treatment, 33.

DR. STEVENS'S EXPERIMENTS ON THE BLOOD.

NOTE FROM DR. J. JOHNSON.

To the Editor of The Lancet.

Sir,—In order to prevent any misconception of the statement which I made in the Westminster Medical Society, last Saturday night, relative to Dr. Stevens, I beg you will permit the following explanation to appear in your next number.

A few weeks ago, I received from Dr. Hackett, principal medical officer in Trinidad, but now in Antigua, a voluminous document, charging Dr. Stevens, among other things, with "misrepresentation of facts as they occurred at Trinidad, and as forming certain data for the support of his hypothesis respecting the blood in fever, &c. &c.;" and also with "garbling the letter of Mr. Greatrex, to suit his purposes." This last charge, indeed, appears to be made by Mr. Greatrex himself, in an inclosed letter. Considering these melancholy disclosures and criminations to be detrimental and disgraceful to medical science, I had laid aside the idea of making the document public, till my attention was roused by the strong recommendations of a contemporary journal, and also of Dr. O'Shaughnessy to institute extensive trials of the alkaline* treatment in fevers and in cholera, based upon Dr. Stevens's representations of the success which was said to attend such practice in Trinidad. I immediately saw that it would be culpable, if not criminal in me, any longer to withhold the document which I possessed, from the public; and hence my transmission of it to Dr. O'Shaughnessy, to prevent his leaning on Dr. Stevens's statements in his forthcoming paper, and my verbal caution to the members of the *Westminster Medical Society*. If, Sir, in my *viva voce* observations on that occasion, my language should have conveyed any other meaning or impression than what the foregoing statement ought to convey, I hereby disclaim it. The paper shall be published in a week or two, *verbatim et literatim*; and an atten-

* Dr. Johnson is not quite correct in supposing that Dr. O'Shaughnessy recommended the trial of *alkaline* remedies. Dr. O'S. alluded only to *highly oxygenated*, and by no means to *alkaline* salts.—Ed. L.

tive perusal of it convinces me, that a more important document, respecting the pathology and treatment of tropical fevers, and even of fevers in general, has never been submitted to the public.

I am, Sir, your most obedient servant,
JAMES JOHNSON.

Suffolk Place, Pall Mall,
5th December, 1831.

MR. YOUATT'S LECTURES ON VETERINARY MEDICINE.

To the Editor of THE LANCET.

SIR,—In the announcement of the intended publication of my Veterinary Lectures in your most valuable periodical, you have given me an honorary title to which I have no right. Veterinary medicine has but lately begun to assert her claim to public consideration, and that claim is not yet sufficiently recognised to obtain for her a *professor's chair*, even in that enlightened and liberal institution, the University of London.

I am only *lecturer* in that institution, an *appointed* lecturer, indeed; but I am proud of *that* title, for it enables me to plead, even there, and I am assured that I shall not ultimately plead in vain, the cause of my too much undervalued profession. *You* will now cause that plea to be heard by the medical world. I thank you.

Of the lectures I will only say, that they shall be honestly the same that are delivered in my class-room; except that some of the illustrations must be omitted in order that 120 lectures may be contained in the two volumes. I am, Sir,

Your very obedient servant,
W. YOUATT.

3, Nassau-street, Middlesex Hospital, 5th Dec. 1831.

*** The work of "condensation" will be a laborious one to Mr. YOUATT, but one of the greatest advantage to the readers of this journal. Arguments are not the less strong because they are put tersely; neither are facts the less forcible, because they are comprehended in a brief space. Mr. YOUATT, we venture to affirm, will always take especial care that his illustrations shall be sufficiently full to convey a correct knowledge of the subject under discussion; and as for ourselves, we can assure the reader, that his pocket should be taxed rather than his understanding, as we would treat him to an occasional "supplement" were we to find that the marrow and substance of the lectures on veterinary medicine could not be presented to him in the usual number of pages allotted to this journal.—ED. L.

CHOLERA OR NO CHOLERA.

TRICKS OF SOME GOVERNMENTS.

To the Editor of THE LANCET.*

A great number of persons considered the "Sunderland affair" as a "*government hoax*, got up for the purpose of producing a counter-revolutionary excitement, and distracting the attention of the people from the reform bill," &c. It is certain that a farce of this sort was once played off with great effect during the riots in Lord G. Gordon's time, or Jack Wilkes's, which quieted the people as effectually as the largest military force could have done, and this, I believe, also happened during a Whig administration. A report was spread that the *plague* had been imported into London, and was raging in Wapping,—that the government was doing every-thing in its power to hush it up, &c. &c. &c.—The thing took like wild-fire, and operated as a most effectual sedative on the popular fury,—after it had done its work, which of course could not have been accomplished without the aid of the *faculty*, and of certain publications (now, thank God, extinct) called *Liespapers*.† A number of tar-barrels were set on fire on the river, and the people were told the plague was fairly "burnt out," which of course they were very glad to hear. Now the cholera comes in "rather a questionable shape," and the news of it certainly arrived most opportunely on the week previous to that in which some grand riots were to be got up in the metropolis.

There can be no doubt that there is a sort of bad endemic cholera always to be met with in the autumn at Sunderland, from the testimony of Dr. Brown, an eminent physician of that place, who, in a work published in 1828 (p. 37), makes the following remarks:—"But the most decisive proof of cholera being the effect of *malaria*, is to be found in the fact, that many of the most obstinate cases of remittent fever, which have occurred in this district (Sunderland), commenced with that disease. During the autumn of 1827, I treated a case which commenced with cholera and passed into remittent fever; but during the two preceding years, the number of cases in which remittent fever *commenced with cholera, was very great*."

Could any of your correspondents inform me, if there is any-thing worthy of note in a method of treating the spasmodic cholera, discovered by a Dr. Wickher, a Hungarian,

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* This letter would have been published in Nov. but we had not sufficient space for it.—ED. L.

† Not quite extinct; vide *Old Times*.—ED. L.

residing at Eisenstadt, near Grosshoflen, in Hungary. He was in the service of Prince Esterhazy (the brother, I believe, of our Austrian Ambassador); his treatise has, I understand, been printed, and his system adopted in the hospitals at Vienna with great success, where the number of recoveries, in proportion to that of new cases, I have frequently observed to be greater than elsewhere, thus:—

October 10th. Seventy-three new cases, 52 recoveries, 45 deaths.

11th. Seventy-nine new cases, 62 recoveries, 46 deaths.

12th. Fifty-one new cases, 44 recoveries, 36 deaths, &c.

* * * * * *

Your very obedient servant,
C. R. Goring, M.D.

Lambeth, Nov. 15th.

[After the "History of the Cholera," published in the Lancet, No. 429, we are of opinion that Dr. Goring would not require the publication of the concluding portion of his letter; hence we have let it terminate as above.—Ed. L.]

ST. BARTHOLOMEW'S HOSPITAL.

OSTEO-SARCOMA OF THE ANTRUM.—EXTIRPATION OF THE SUPERIOR MAXILLARY BONE.

Sitwell's Ward.—Mary Cave, ætat. 45, admitted under Mr. Earle. Ascribes the origin of her disease to a blow received some months since upon the cheek. She states that in August last a small swelling was perceivable on the right side of the face, and that this increased rapidly to the present size of the tumour, being a source of terrible pain and anxiety. The integuments of the right cheek are now stretched over a very large protruding mass, part of which, extending from the mouth, keeps the upper and lower jaws continually separated, whilst the fœtor proceeding thence is most intolerable. Articulation is of course almost completely interrupted, and although the poor woman appears willing to give every inquirer the particulars of her case, yet the effort is extremely painful, and she seems conscious of the loathsome nature of the excrescence.

Whilst in the Hospital the fungus has continued to increase, and thus situated she has accepted with readiness and resignation the proposal to attempt a cure by operation. There was a division of opinion on the propriety of such a step amongst the surgeons, but Mr. Earle, finding her prepared and desirous to take the chance, has determined on accomplishing the extirpation of the diseased structure.

Thursday last was fixed on for the day of

OPERATION,

but the rumour of it had drawn together such a multitude from the different schools, and amongst others the celebrated Paganini, that, after finding an adjournment to the Anatomical theatre impracticable, it was resolved to defer it until the end of the week. Of course it would have been highly culpable to trifle with the anxious feelings of a patient whose mind has been made up on a step involving the chance of life and death, but we believe from inquiry, that the congregation of visitors was so dense and unruly as quite to justify the postponement.

On Saturday last, the appointed day, the poor woman appeared to be in a state of mind desirable in her situation. When she was brought into the operating theatre and placed on the table, opening her mouth with less reserve than before, the diseased growth assumed a most formidable aspect.

In Mr. Scott's operation, as will doubtless be remembered, the *external* carotid artery was secured; here, however, it was deemed advisable, as a precautionary step, to tie the *common* carotid of the affected side. This was accomplished just below the bifurcation of the two great branches, opposite the cricoid cartilage. The position of the contiguous parts rendered the vessel difficult of access; but after a careful dissection a broad reserve ligature was passed around it, and a small cork placed on the trunk to act as a compressor. This preliminary process, occupying about ten minutes, having been completed, a short interval elapsed before proceeding to the second or main stage of the operation. After an examination *per manum* of the condition and extent of the tumour, Mr. Earle commenced the first incision over the nasal process of the os maxillare superius, about the eighth of an inch from the internal canthus, carrying it down to the commissure of the mouth. From this point a second incision was made transversely across the cheek towards the angle of the lower-jaw. By these incisions a triangular flap was marked out, towards the base of which Mr. Earle now began to dissect off the integuments, upwards and outwards, so as to expose the surface of the fungoid mass, which appeared to have an extensive attachment.

The operator now carefully examined the tumour with his finger, and found that the whole anterior wall of the antrum was broken down, and small loose portions of bone were felt in different parts of the diseased mass. The orbitar plate was also affected, and this determined Mr. Earle on

removing the whole of the maxillary bone, which he proceeded to effect in the following manner. The malar bone was divided into the spheno-maxillary fissure with a strong pair of bone nippers, in the use of which great force was necessary. The nasal process of the maxillary bone was divided with the same instrument; the front incisor was then drawn, and the palatine process cut through in like manner. The whole of the bony connexions being thus separated, it now remained to cut away the soft attachments. The orbitar plate was dissected away from the contents of the orbit, and the inferior oblique muscle divided at its origin, when, with some exertion, the diseased structure was removed, leaving behind an immense gap, through which the whole interior of the mouth, and isthmus faucium were brought to view. Mr. Earle next abstracted the cork which had been placed on the carotid artery, and tied the vessel. The beneficial effects of its compression, during the progress of the operation, were very manifest, every thing being rendered clear by the freedom from hæmorrhage. The severed edges being now drawn into contact,—the transverse with the common, and the vertical with the hair-lip, suture—strips of plaster were placed over them. The patient was carried from the theatre fifty-five minutes after the commencement of the operation, having exhibited throughout the most extraordinary and admirable firmness. Mr. Earle also, who was assisted by Messrs. Lawrence, Skey, and Scott of the London Hospital, displayed great coolness and self-possession, though there occurred two or three times some little confusion around him, not however to be wondered at, considering that it happened *in a crowd*.

We could not get a sight of the extirpated parts, being told in the theatre that they were to be carried to the Museum, and in the Museum, that they were not to be seen there. Mr. Earle, however, who, upon coming forward, was greeted with deserved applause, stated that the diseased growth was of a mixed character, being partly fibro-cartilaginous, partly fungoid. Absorption of the surrounding parts had gone on to a great extent, scarcely a bit of the walls of the antrum being left. It was to be hoped that the radicles of the structure had been extirpated. His experience led him to form an unfavourable diagnosis of these cases when occurring between puberty and the age of thirty, but after forty-five an auspicious result might be looked for. He trusted, therefore, that as the patient was of that age, she would be added to the list of successful sufferers.

On Saturday night the patient was bled to sixteeen ounces, since which time she has been going on well. As far as the dressings permit us to judge, we may say that, should she recover, the deformity will not be great.

On inquiry after the man upon whom a similar operation was performed at the London Hospital about twelve months ago, and a report of which appeared in this Journal, we are happy to find that he is quite restored to good health.

THE BARTHOLOMEW GATHERING.

In the *area*, during the performance of this "capital operation," we observed gathering round the operator's elbow, not less than forty persons. As we know this circumstance to be a constant source of complaint, and justly so, perhaps it may not be amiss to submit to consideration in the pages of THE LANCET, a "Regulation" which seems to hang like an "antiquated charter" on the walls of the Theatre.

"*Regulation to be observed at Operations.*

"It is requested that gentlemen do observe, that the AREA of the Theatre is appropriated to the SURGEONS, and the *dressers* of the *operator* only.

"N.B. The front row is for the dressers, and the remaining row for the other pupils."

Were this request attended to, the unseeming cry of "heads," "heads," would not be heard at the most critical points of the operation, whilst to those of the intruders who lift up their eyes in apparent astonishment at the sound, we would suggest the possibility that the unnecessary interposition of a "head," during a process not to be seen every day, may cause a large hiatus in the *value* of the twenty-six-guinea fee for "surgical practice." If there be any meaning in the foregoing proper regulation, we would ask, Why is it not enforced?

TO CORRESPONDENTS.

COMMUNICATIONS have been received from An Old Practitioner (3)—Mr. Merivale—Dr. Jenkins—A Medical Reformer—Delta—O. O. O—Dr. T Weatherill—A Medical Student and Constant Reader—Rorgeterb—M. S.—Dr. Gordon Smith—Mr. J. Lyon—Dr. N. Hanson—Mr. Richard Birtwhistle—Mr. G. B. Sherriffs—Achaz—An Original Subscriber—A Poor Assistant-Surgeon, unfortunately not born in Scotland—An M.D., with observations on the present state of the public charities and institutions of Liverpool—Corkagiensis—A Pupil—Mr. R. U. West, of Westminster—Mr. A. W. Close, of Leeds—Dr. I. M'Whirter—G. of Virgin Island, West Indies—Several letters from naval medical officers—Letters relating to the admission of pupils to the London Lying-in Hospital—D. R. R. of Lanarkshire—Mr. T. B. Pitt of Brighton—Viator—Neuter—Dr. Edmund Sharkey of Dublin—Mr. Neill of Liverpool, and Mr. W. West of Leeds.

We have also to acknowledge, with our best thanks, the receipt of the *Sheffield Mercury*, *Liverpool Mercury*, *Preston Chronicle*, *Salisbury Journal*, the *Hampshire Telegraph*, the *Comet*, and the *Shrewsbury Chronicle*, containing an account of the "*cholcric* meeting" at the shire-hall.

"Abuses at the Birmingham Hospital," shall appear.

We shall place on record in the pages of this Journal a carefully-digested account of the trial of Bishop and his companions, as soon as we have room for it.

A Student of the London University laments that the medical pupils of that establishment are not distinguished by some peculiarity of dress as are the pupils of King's College, and wishes us to call the attention of the proprietors to the omission. We cannot condole with him upon his loss, thinking that he has sustained none. On the contrary, we look upon the absence of such fooleries as a sure indication that the University is under the guidance of men of sound sense, whose minds are directed by the purified spirit of the times in which they live; while we view the unsightly cap and gown of King's College as the unerring evidences of the servile, not to say imbecile, minds of the conductors of that institution, and the certain tokens of its destined non-advancement in the high road of scientific reputation and preferment. The men who could suggest and encourage the adoption of such disgusting mummeries, are, we say it advisedly, utterly incompetent to maintain a conspicuous or even creditable position with their powerful, more enlightened, and more liberal competitors. No man of sense can behold the wigs and gowns of judges and barristers without blushing, when he reflects that such appendages are not the *least* essential ornaments of one of the "existing institutions" of this country. The day is not far distant when *these* fooleries will be swept away, and we could state where exists the *Broom* by which the work ought to be instantly commenced.

P. S. The inhalation of oxygen gas has been tried and proved to be unsuccessful.

Γ——. Such an indenture will qualify, but its authenticity must be clearly proved. The *tickets* which qualify at the Edinburgh and London Colleges do *not* entitle the candidate to examination before the Company of Apothecaries. Evidence of attendance upon the medical practice of an hospital or dispensary is deemed by the latter body an indispensable requisite.

R. H. T. 1st. The indentures, or proofs from the master or others by affidavit and certificates, that the five years apprenticeship was actually served. 2nd. A student is allowed to attend lectures and hospital practice during the last two years apprenticeship, but not earlier. Our correspondent must recollect, however, that the attendance upon lectures will not be *allowed*, if the pupil do not reside in the neighbourhood of some "recognised" school. For example, he could not be serving his apprenticeship in Colchester and attending lectures in London at the same time, but if he were apprenticed in a town where there are what the examiners are pleased to call "recognised" medical teachers, then it is considered that the pupil can at the same time serve his master by dispensing medicines, and improve himself by an occasional attendance on lectures and hospital practice.

Viator. The Apothecaries' Company cannot successfully prosecute persons for attending and prescribing in medical cases, as there can be no penalty inflicted unless the prescriber also *prepare* and supply the medicines. Thus it is that the Apothecaries Act has induced hundreds of surgeons to occupy the ground once exclusively held by physicians.

On being asked why the reviewer in the *Medical and Surgical Journal* could not "*analyse*" Mr. Bransby Cooper's work on anatomy, our friend Joe Burns replied, "Because it is a *simple* substance."

Alpha desires to ask if we are not "in contradiction with our own views," when we remark that "the *seclusion* of the sick should be insisted on" during the prevalence of the cholera. *Alpha*, we suspect, is disposed to be satirical in putting this question to us, as he evidently refers to a supposed carelessness in examining the sheets for press. The entire article shows that *not* was accidentally omitted by the compositor. *Alpha* himself must admit that the whole tenor of our articles on the cholera enforces the non-seclusion of the sick.

Mr. J. H. Stein's communication was in type before our last number went to press, but there was not space for its insertion. This circumstance accounts for its not having been acknowledged.

Mr. R. Birtwhistle.. The communication now received shall be inserted, and those promised would be acceptable, as the subject to be discussed is one of great importance, and the abuses most glaring.

S. M. If we can find room for it, the article shall appear in an early number; but, as our correspondent remarks, Dr. Ryan can scarcely complain of "anonymous" criticism, seeing that he has inserted in his own journal letters from an *anonymous* "Bartholomew" Student, and an *anonymous* "Borough" Student, to eulogise his Midwifery, and to condemn The Lancet. A brace of silly urchins! Dr. Ryan ought to know better.

The request of *E. P. W.* shall be complied with. The paper was omitted from want of space.

The communication forwarded by *Mr. C. E. Jones* shall be inserted wholly or in part; at all events we will not select the shell and throw the kernel into the fire.

D. C. We regret that The Lancet *corps* is so thoroughly full in all its departments that our exercise-ground is not sufficiently capacious to enable us to avail ourselves of the services of so talented a volunteer.

Clinical lectures by Drs. Elliotson and Billing, two lectures on Veterinary Medicine by Mr. Youatt, a report of Saturday's debate at the Westminster Medical Society, together with several communications which would have been inserted in this number of our Journal, if we could have afforded space for them, will be published in the next Lancet.

A. R. K. The third sentence of our reply to this correspondent, inserted in our last number, should have stood thus:—The account of the post-mortem examination is so imperfect as to render the whole of the report of little value in its present shape.

We are indebted to *A Medical Student* at Glasgow for a review of the schools and lecturers in that University, sent us some time since, but his letter was too long and too eulogistic (indiscriminately so, we think) for publication. We would sooner have some good cases from him, selected from the wards of the infirmary. They shall have insertion if authenticated.

One reason for our not inserting the letter of *An English Medical Student* was, that the lecture itself, of which he gave us an outline, appeared in our pages; and the criticisms on Mr. Hart and the eulogy of Mr. Ellis, did not possess a sufficient claim to publication in an isolated form.

The letter of *Mr. T.* on the cholera contained nothing that was novel.

The paper of *P.* is preserved for another occasion.

A correspondent under the signature of *A Legally-qualified Apothecary*, complains that the "Manchester Association for upholding the respectability of the Profession," is acting the part of common informers to the Apothecaries' Company; and thinks that gentlemen occupying distinguished stations as medical men, ought to be otherwise employed during their leisure.